PAPER TRADE JOURNAL

Reg. U. S. Pat. Off.

PAPER

SIXTY-FIFTH YEAR

Established Feb. 17, 1899
Consolidated Nov. 16, 1899
with PAPER TRADE JOURNAL.

Vol. CIII, No. 22 Thursday, November 26, 1936

Established Sept. 21, 1910
Consolidated Feb. 19, 1925
with PAPER TRADE JOURNAL.

Joint Printing Committee Opens Paper Bids

Only Thirty-four Concerns, Which is the Smallest Number in Many Years, Participate in Semi-Annual Bidding for Supplying Paper to the Government Printing Office for the Six Months' Period Beginning January 1, 1937.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 23, 1936—Bids were opened today by the Joint Congressional Committee on Printing for a six months paper supply for the Government Printing Office beginning January 1, next.

The committee received only 34 bids which is the smallest number for many years. When bids were received in May there were 50 bidders. The committee expressed regret at the small number of bids. The prices were generally higher than those of last May.

There were several notes regarding the Walsh-Healey government contract act. The Old Dominion Paper Company stated that they would not accept awards higher than $6,600 because of Clause 15 of the specifications providing that the Public Printer can order 50 per cent more than the actual amount asked for in the specifications. In the event that this was done it would make the amount more than $10,000 which would bring the contract under the Walsh-Healey law. There were comparatively few identical bids submitted.

A meeting of the Joint Committee will be held on November 30 to consider the making of awards. The bids received today were as follows:

Newsprint

No. 1—1,500,000 lbs., 24x36—64; rolls, 24, 36, and 48 ins. wide (3-inch fiber cores, with metal ends).

No bids.

Machine-Finish Book

No. 3—400,000 lbs., 25x38—70; flat, cut 24x32, 28x38, and 31¼x45½ ins.

Perkins Goodwin Co.	5.70c
Walker, Goulard Plehn	5.70c
Whitaker Paper Co.	5.70c
R. P. Andrews Paper Co.	5.76c
Barton, Duer & Koch Paper Co.	5.70c
Fitchburg Paper Co	5.70c
Dobler & Mudge	5.70c
Stanford Paper Co.	5.70c
Paper Corp. of U. S.	5.70c

No. 4—400,000 lbs., 25x38—70; flat, cut 24x38 and 38x48 ins.

John F. Post, Inc.	5.67c
Perkins Goodwin Co.	5.70c
Walker, Goulard Plehn	5.70c
Whitaker Paper Co.	5.67c
R. P. Andrews Paper Co.	5.74c
Barton, Duer & Koch Paper Co.	5.67c
Fitchburg Paper Co.	5.70c
Stanford Paper Co.	5.70c
Paper Corp. of U. S.	5.70c

No. 5—400,000 lbs., 25x38—70; flat, cut 24x38 and 38x48 ins.

Perkins Goodwin Co.	5.32c
Walker, Goulard Plehn	5.70c
Whitaker Paper Co.	5.70c
R. P. Andrews Paper Co.	5.78c
Barton, Duer & Koch Paper Co.	5.78c
Fitchburg Paper Co.	5.70c
Dobler & Mudge	5.70c
Stanford Paper Co.	5.70c
Paper Corp. of U. S.	5.70c

No. 6—250,000 lbs., 25x38—70; rolls, 18, 21, 23, and 28½ ins. wide (3-inch iron cores).

Perkins Goodwin Co.	5.32c
Walker, Goulard Plehn	5.28c
Whitaker Paper Co.	5.37c
R. P. Andrews Paper Co.	5.41c
Barton, Duer & Koch Paper Co.	5.32c
Fitchburg Paper Co.	5.28c
Dobler & Mudge	5.32c
Stanford Paper Co.	5.28c
Paper Corp. of U. S.	5.32c

No. 7—500,000 lbs., 25x38—70; rolls, 19 and 38 ins. wide (3-inch iron cores).

Walker, Goulard Plehn	5.28c
Whitaker Paper Co.	5.32c
R. P. Andrews Paper Co.	5.41c
Barton, Duer & Koch Paper Co.	5.36c
Fitchburg Paper Co.	5.28c
Dobler & Mudge	5.32c
Stanford Paper Co.	5.28c
Paper Corp. of U. S.	5.32c

No. 8—500,000 lbs., 25x38—70; rolls, 19 and 38 ins. wide (3-inch iron cores).

John F. Post, Inc.	5.28c
Walker, Goulard Plehn	5.28c
Whitaker Paper Co.	5.28c
R. P. Andrews Paper Co.	5.33c
Barton, Duer & Koch Paper Co.	5.28c
Fitchburg Paper Co.	5.28c
Stanford Paper Co.	5.28c
Paper Corp. of U. S.	5.32c

No. 9—300,000 lbs., 25x38—70; rolls, 24, 36, and 48 ins. wide (3-inch iron cores).

John F. Post, Inc.	5.28c
Walker, Goulard Plehn	5.28c
Whitaker Paper Co.	5.28c
R. P. Andrews Paper Co.	5.33c
Barton, Duer & Koch Paper Co.	5.28c
Fitchburg Paper Co.	5.28c
Stanford Paper Co.	5.28c
Paper Corp. of U. S.	5.32c

No. 10—250,000 lbs., 25x38—80; rolls, 32 ins. wide (3-inch iron cores).

John F. Post, Inc.	5.31c
Walker, Goulard Plehn	5.36c
Whitaker Paper Co.	5.31c
R. P. Andrews Paper Co.	5.36c
Barton, Duer & Koch Paper Co.	5.31c
Fitchburg Paper Co.	5.36c
Stanford Paper Co.	5.31c
Paper Corp. of U. S.	5.31c

No. 11—400,000 lbs., 25x38—80; flat, cut 24x38, 33¾x64, and 38x48 ins.

John F. Post, Inc.	5.42c
Walker, Goulard Plehn	5.47c
Whitaker Paper Co.	5.42c
R. P. Andrews Paper Co.	5.47c
Barton, Duer & Koch Paper Co.	5.42c
Fitchburg Paper Co.	5.47c
Stanford Paper Co.	5.47c
Paper Corp. of U. S.	5.42c

No. 12—400,000 lbs., 25x38—100; flat, cut 22¼x32¼, 24x38, 24¼x36¼, 32x42, 38x48 and 41x52 ins.

John F. Post, Inc.	5.16c
Perkins Goodwin Co.	5.19c
Walker, Goulard Plehn	5.16c
Whitaker Paper Co.	5.16c
R. P. Andrews Paper Co.	5.21c
Barton, Duer & Koch Paper Co.	5.16c
Fitchburg Paper Co.	5.16c
Stanford Paper Co.	5.16c
Paper Corp. of U. S.	5.16c

No. 13—15,000 lbs., 25x38—120 and 140; flat, cut 29x41, 32x52, and 38x48 ins. Min. order 5,000 lbs.

John F. Post, Inc.	5.16c
Walker, Goulard Plehn Co.	5.21c
Whitaker Paper Co.	5.26c
R. P. Andrews Paper Co.	5.31c
Barton, Duer & Koch Paper Co.	5.31c
Fitchburg Paper Co.	5.21c
Stanford Paper Co.	5.21c

No. 14—15,000 lbs., blue and salmon, 25x38—70 and 100; flat, cut 25x38 and 38x48 inc. Min. order, one color, 5,000 lbs.

Barton, Duer & Koch Paper Co.	16.58c [1]
Barton, Duer & Koch Paper Co.	16.07c [2]

[1] 70 lb.
[2] 100 lb.

Machine-Finish Book End Paper

No. 15—40,000 lbs., flat, 24x38—160;

(*Continued on page 26*)

Kimberly-Clark to Construct Another Addition

Work to Start Immediately On Large New Building for Lakeview Mill At Neenah, Wis.—Equipment to Be Installed for Operations Beginning Next July—New Development Will Make Lakeview Four-Machine Plant.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., November 23, 1936—Following action of the board of directors at a meeting November 17, the Kimberly-Clark Corporation, Neenah, Wis., announced that it will build another large addition to its Lakeview mill at Neenah. Work will be started immediately so the building will be completed and new equipment installed for operations beginning July 1, 1937.

The company plans to duplicate the addition made to the mill during the last six months. That unit was 110 by 130 feet and was of steel, concrete and brick construction. An additional paper machine was installed and has been in operation since November 1. Construction was started the latter part of May, and was completed early in the fall.

The Lakeview is now a three-machine mill, and the duplication of equipment in the proposed addition will make it a four-machine mill. This mill supplies a large part of the absorbent wadding for the company's cellucotton factories, in addition to a line of paper specialties.

Nekoosa-Edwards Wage Advance

Upward revision of wages in various parts of the country is being reflected in the paper industry as well. The first Wisconsin mill to announce such a policy is the Nekoosa-Edwards Paper Company, of Port Edwards and Nekoosa, Wis. Acting on recommendations of the mill council, John E. Alexander, president and general manager, announced that common labor rates will be advanced from 40½ cents to 43 cents per hour. A similar adjustment will be made to other workers in the lower income brackets. Approximately 400 employees will benefit by the increases. The new scale will become effective immediately.

To Discontinue School Paper Converting Division

Mr. Alexander also announced that the ruled paper and school paper converting division, one of the smallest departments, will be discontinued in about ten days. The equipment has been sold to the Western Tablet and Stationery Manufacturing Company of Ohio, and will be moved to its factory at St. Joseph, Mich. Manufacture of these grades of paper will be continued, but the converting will be suspended. The move was made necessary because of plans to increase the manufacture of fine watermarked grades at the Port Edwards mill. The company shifted the mill from kraft papers to finer grades some time ago, and finds it more advantageous to expand in this field. These new products have met with favor in the markets, and the demand is growing.

News of the Industry

As soon as nine remaining parcels of land are obtained through condemnation proceedings, the Wisconsin Valley Improvement Company will close the gates on the completed reservoir on the Big Eau Pleine River in Marathon County, Wis., and will allow it to fill up during the winter and spring. Engineers are confident the reservoir will be filled to its storage capacity of 4,500,000,000 cubic feet when the spring floods arrive. This reservoir is the largest in a string along the upper Wisconsin River, and will double the storage capacity. It will be dwarfed, however, by the reservoir to be built later on the Little Eau Pleine River. The two will be connected by a vast tunnel.

All of the excavation work for the 12-mile long artificial lake has been completed, as well as the fills for a relocated highway and new bridges. The gates also have been installed on the concrete dam, and only the riprapping remains to be completed. Construction work will proceed during the winter on a new steel bridge 40 feet above the lake level to replace one on the highway which has been abandoned.

The work was carried on and financed by the Consolidated Water Power and Paper Company, whose engineers conceived the plan and have supervised the construction work. A force of 200 men worked day and night on the vast project. Excavating machinery, tractors and trucks were not spared in the relentless task of preparing the huge crater, and it was completed well ahead of schedule.

H. G. Cram, mill manager of the Combined Locks Paper Company, Appleton, Wis., is on a leave of absence until the first of the year, when he will return to active duty with the company. After a short visit to Hot Springs, Ark., Mr. Cram will devote his time for the remainder of the year to the development of engineering matters in which he is interested. The company announces that Pete J. Massey, of Chicago, has joined the organization as assistant to the president, Lewis L. Alsted, and is in charge of mill operations.

More equitable freight rates on shipments of soda ash and caustic soda from Wyandotte, Mich. and Barberton, Ohio, have been granted the Bergstrom Paper Company, Neenah, Wis., under a decision handed down by the Interstate Commerce Commission at Washington. The company contended rates charged by the Akron and Barberton Belt Railroad Company and other carriers were unreasonable. Reparation was granted the company to the amount of the difference between the charges paid and those which would have accrued at rates considered by the commission as reasonable.

Approximately $1,000,000 is being spent in Wisconsin by the Resettlement Administration to acquire 226,121 acres of land. It will be turned over to the federal forestry department to be added to the forest preserves through which timber supplies are being preserved, and reforestation work is being developed on a vast scale. Three new forest projects will be created, in Bayfield, Oconto and Forest counties. CCC crews will reforest much of this land during the next year.

An estate of more than a million dollars was left by C. A. Goodman of Marinette, Wis., who died following an automobile accident several months ago. He was a director of the Northern Paper Mills, Green Bay, Wis., and a timber capitalist. This total does not include a large amount of life insurance held by Mr. Goodman.

F. J. Harwood, president of Appleton Woolen Mills, Appleton, Wis., has retired as a member of the board of trustees of Riverview Sanatorium, a tuberculosis institution operated by Outagamie county. He was a member of the board for approximately a quarter of a century.

Pacona Offers Price Bros. Reorganization Plan

Provides Stay of Fifteen Days to Permit of Creditor's Acceptance—Pacona Owns Approximately 97 Per Cent of Company's Bonds—Trustee Requested to Declare Obligations Due and to Dispose of Mortgage Assets.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., November 23, 1936.—Pacona Ltd., which owns some 97 per cent of the bonds of Price Bros. & Co., the big newsprint manufacturing firm now being operated under a trustee in bankruptcy, has officially announced a new plan for the reorganization of that company, and at the same time is requesting the trustee for the bondholders to declare the bonds due and to sell the mortgaged assets of the company. The significance of this latter is seen in a provision for a stay of fifteen days in the sale of the company's assets "to permit preferred and common shareholders' committees, the directors of the company and the trustee in bankruptcy to signify their acceptance of the Pacona plan." It is further intimated that interests controlling a majority of the share capital of Pacona Ltd. are desirous of a prompt and sound reorganization of Price Brothers because they are unsecured creditors of the bankrupt company for a large amount, because they are purveyors under a long-term contract of the electrical energy required by the company, and because they have operations near Price Brothers' mills that are dependent for a part of their revenues on the successful operation of Price Brothers.

Under the plan new capital to the extent of $8,600,000 will be brought into the company, Pacona being prepared to provide $6,445,000 of this through purchase of common shares and present shareholders, in addition to being offered free share in the reorganized company, are being asked to put up $2,100,000 through the purchase of new common shares.

In addition to this, present shareholders are also granted the privilege of providing $3,186,452 of the $6,445,000 which Pacona underwrites, in which case the present shareholders would receive common shares for this sum at the rate of one share for each $12.50, instead of Pacona receiving these shares.

In still other words, Pacona agrees to underwrite 660,898 shares of new common at $6,445,000, while present shareholders are offered free participation in 62,843 shares of $50 par preferred and 188,529 common shares, all at no cost to present shareholders. So that present shareholders, however, may retain control of the company if they desire, Pacona is further suggesting that the present shareholders purchase at $12.50 per share the remaining 169,551 shares of common stock unissued, and further to purchase at the same share price 254,917 of the 660,898 shares underwritten by Pacona. If the present shareholders wish to supply this additional $3,186,452, thus reducing Pacona's commitment from $6,445,000 to $3,268,548 by so doing they, preferred and common combined, will, in addition to the entire preferred stock of the reorganized company, own in all 594,019 of the 1,000,000 shares, thus having approximately 60 per cent of the entire common capital, as well as 100 per cent of the preferred capital.

In connection with the funded debt of the new company the plan provides for the issue of $14,000,000 in two-year five per cent bonds, which would be pledged with the banking syndicate which will hold an equivalent amount of Pacona notes after utilization of the $6,300,000 unused credit for the benefit of Price Brothers creditors and for the liquidation of its bank loans. The company will thereby acquire the $10,788,400 principal amount of its existing 6's, pledged by Pacona in respect to its notes, and these bonds will be cancelled. Provision is made for payment of the remaining $225,700 in outstanding 6's.

Lake St. John Reorganization

Shareholders of St. Lawrence Corporation, Ltd., meeting in Montreal, approved by a large majority the proposed reorganization plan of Lake St. John Power and Paper Company, Ltd. The St. Lawrence Corporation owns a majority of stock in the company concerned. The president of St. Lawrence Corporation, A. K. Cameron, admitted that he would have liked to see the reorganization delayed, but said it was brought forward to obviate the fear of foreclosure by bond and debenture holders.

Newsprint Producers Have New Cause for Worry

Instead of worrying over lack of orders, newsprint operators here are now worrying over how on earth to keep production up to demand—at least many of them are. With mills running at capacity and customers clamoring for delivery, many executives are now wishing they had enjoyed their leisure more when they had it for leisure now is scarce. Some of the mills are in a particularly difficult position. They are under contract to furnish publishers with all or a certain definite proportion of their requirements, rather than an arbitrary number of tons

British and Brazilian Markets

Trade returns from Great Britain show that for the nine months ended September 30 there was a further growth in the volume of Britain's purchases of newsprint in which Canada participated. In the nine months under review the quantity entered from the Dominion was 2,003,018 cwts., valued at 836,419 pounds sterling, an advance of some 38 per cent in a total of 6,115,743 cwts. In the same period purchases from Newfoundland amounted to 2,441,138 cwt., valued at 1,148,408 pounds sterling.

New Zealand purchased from Canada in the first six months of this year newsprint to the value of 190,479 pounds sterling, this being 95 per cent of the newsprint imports of New Zealand.

A report to the Trade and Commerce Department from Brazil states that newsprint imports by that country have now exceeded the 1929 pre-revolution figure of 41,908 tons valued at $641,000. In 1934 the total imports were 40,422 tons valued at $1,718,000. In 1935, however, 44,815 tons valued at $2,150,000 were imported. Finland (14,823 tons at $583,000 in 1934 and 19,506 tons at $862,000 in 1935) supplied roughly 40 per cent of the total imports. Germany, which in 1934 with 9,444 tons valued at $202,000 occupied fourth place, moved to second in 1935 with 9,354 tons valued at $548,000. Canada (5,930 tons at $212,000 in 1934 and 9,653 tons at $386,000 in 1935) remained in third place, followed by Sweden (4,642 tons at $201,000 and 3,613 tons at $167,000). Norway (9,867 tons at $421,000 and 2,064 tons at $96,000) dropped from second position in 1934 to fifth position in 1935. Holland, the United States, and Great Britian were the other suppliers.

Paper Demand Continues Satisfactory In Chicago

Requests for Various Grades of Fine Paper Well Sustained—Bond and Ledger Situation Considered Favorable—Book and Cover Papers Practically Unchanged—Sulphite Bonds Are Steady—Kraft Paper Displays Strength.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., November 23, 1936—Little change is noted in the Chicago paper market this week. The general spread of activity is not so pronounced and this position is reported as partially due to the comparison with the speed with which the industry has been strengthening itself. The sulphite bond market, around which most of the news interest has been developing in the past three weeks, was reported to be quiet and steady at present prices with demand continuing to be satisfactory. The entire bond and ledger situation was quoted as favorable with continued strengthening in the offing. Books and covers showed little change during the past six days. The local kraft market continued strong with representatives here still quoting the present production pace and the raw materials market as indications of future strength. Newsprint strength carried over into the present week with higher prices reported in the offing. Groundwoods were steady with an upward trend also reported. Waste papers showed absolutely no change in the price structure during the week although some hesitancy in certain lines was reported as production of certain grades began to catch up with the demand for waste papers. The board market remained about the same.

Strathmore Merchandising Plan

A development of more than ordinary interest to the Chicago trade was the announcement that a cooperative merchandising program affecting Strathmore paper distribution in Chicago would go in effect on and after November 15. Four local distributors are affected by the change which is reported to be agreeable and materially helpful to all concerned. The four are the J. W. Butler Paper Company, Chicago Paper Company, James White Paper Company and the Swigart Paper Company.

Under the new plan, which was perfected while J. D. Zink, vice-president and general manager of Strathmore was in Chicago, each of the four distributors may stock any or all of the twenty-four brands in the book and cover paper lines only. Any one of the firms may take an order for any brand and, under the cooperative program as reported, may get whatever price advantage has been agreed upon by the four units and the Strathmore organization.

All advertising matter, samples and other literature will have the imprint of all of the four above named distributors whenever any of the 24 brands within the book and cover line are merchandised.

Aside from this cooperative agreement on all books and covers, all bonds will continue to be exclusively distributed locally by the Swigart Paper Company. Writings manufactured by Strathmore will be handled jointly by the Chicago Paper Company and the Swigart Paper Company. The Wedding line of Strathmore will be handled by the Chicago Paper Company. The cooperative plan is reported to have been tried successfully in New York and is being carried out in Chicago because of the growing importance of this market.

Illinois Occupational Tax

While at the present time paper continues to be taxed under the provisions of the Illinois Occupational Tax, printing of certain kinds has recently been ruled as not subject to the 3 per cent levy according to a decision handed down this week by the Appellate Court of the State. No appeal has been made within the 15 day limit and the court decision will now stand. Paper merchants locally will probably have to revise their methods of billing certain sales to printers and lithographers because of the ruling. Because of the widespread interest in the decision (Adair Printing versus K. L. Ames) not only in Illinois but in other States we are quoting parts of the ruling as follows:

"In that case (a similar case of Burgess Company versus Ames) we said 'the paper is destroyed when the exposure is made and it has no further use or value to any one other than the person interested in that particular reproduction.' The same is true of the work carried on by appellees. Copy for printed matter is delivered to them, and in the process of carrying out their contract of service they use ink for the purpose of destroying plain paper so far as its commercial value is concerned. From that time it is of no use or value to any person other than the one for whom the printing is done. It should be apparent that letter-heads, circulars, mail-order catalogues, printed briefs for an attorney, or any other special printed matter, would be without commercial value, and it follows that the printer is engaged only in service. The appellees are not engaged in the business of selling tangible personal property but in the business of printing—one of the graphic arts."

Dixie-Vortex Earnings

The Dixie-Vortex Company has reported a consolidated net income of $870,859 for the nine months period ended September 30. The income, after Class A dividend requirements for the period, equals $2.64 a share on the 202,196 shares of common stock. The report also includes earnings of the Individual Drinking Cup Company for the four months ended April 30, prior to the latter concern's consolidation with the Vortex Cup Company.

R. C. Fenner, president, stated that during the last quarter of each calendar year the sales volume was relatively low and operations occasionally showed a slight loss. He concluded that, in view of this fact, and together with the indicated results for the nine months, it appeared that profits for the entire year of 1936 will cover dividend requirements at present rates and leave a portion to be carried to the surplus account.

News of the Industry

The American Envelope Company has recently issued a warning that envelopes, "lagging far behind in the price increase" were soon due to advance in price. The Chicago concern stated that paper, gum, boxes, ink and labor, all materials going into the fabrication of envelopes, were higher in price and that this would have an immediate effect on envelope prices.

George Crafts, Chicago sales representative of the Eastern Manufacturing Company, returned to Chicago on November 12 after a three weeks absence in the East. Mr. Crafts returned to Bangor, Maine, to attend the funeral of his father, George Crafts, Sr., who died on October 26 at the age of 72. Mr. Crafts, Sr., was well known in the paper industry. The son remained in Bangor to take care of business matters resulting from the death of his father.

Great Lakes Paper Co. to Increase Production

Third Paper Machine to Begin Operating In Near Future — Minister of Lands and Forests for Ontario Considers Expansion of Output From 58,000 to Nearly 100,000 Tons Indicates Recovery of Newsprint Industry.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., November 23, 1936—The Great Lakes Paper Company, of Port Arthur, Ont., which is now under the control and is being aided by the Ontario Government, will add a third machine to production in the near future. Efforts are being directed toward diversification and development of the timber resources of Northwestern Ontario, and in this connection there are reasons to believe that the Fort William plant of the Abitibi Power and Paper Company may be used. The Hon. Mr. Heenan said that the best indication of the recovery of the newsprint business was the increase of production at the Great Lakes paper mill, from 58,000 to nearly 100,000 tons. He also stated that the Scandinavian countries had exported 26,000 tons of wood and sulphite to the United States during the past year, but would find keener competition from Canada from now on. The Ontario government was out to recapture the market, and had lifted the ban on the export of wood so that anyone who wanted timber to cut would be accommodated.

Pulpwood Situation

The Hon. M. F. Hepburn, Premier of Ontario, says that 12,000 more men will be working in the bush in Northern Ontario this winter than was the case last season. He also declares that the forest products industry had benefited by the export of pulpwood from Crown Lands of the province and that the newsprint industry in Ontario and other parts of Canada was not suffering as a result of the shipment of raw material to the United States. The lifting of the ban on pulpwood had injected new life into the industry.

Mr. Hepburn added that since his government had come into power two years ago, the output of newsprint in Ontario had more than doubled.

C. A. Duval, Sault Ste Marie, Ont., former Crown Lands and Timber Agent in Algoma, who was recently awarded the contract for 20,000 cords of jack pine to be taken out for the Central Paper Company of Muskegon, Mich., says this is the first jack pine cut in that part of Ontario. It has been cut in other parts of the province, but never in Algoma. Thousands of cords of this wood have been going to waste year after year, and now that it is being used for a useful purpose, employment will be given to a large number of men. The Central Paper Company make many different kinds of paper from jack pine pulpwood, although it is not used in the manufacture of newsprint.

It is estimated that upwards of 150 trucks are engaged in international traffic at Fort Frances, Ont., and hauling pulpwood across the international border. The owners of the trucks will have to register with the Bureau of Motor Carriers of the Interstate and Forest Camps Commission. Truck owners hauling their own wood will be exempt, but those hauling for their neighbors, or for firms supplying wood, for compensation, must register.

Thompson-Heyland Lumber Ltd., Toronto report that the pulpwood business is very active at the present time, and showing more encouraging results than it has for the last 4 or 5 years. The demand is better and the prices paid have advanced on the average about ten per cent. Since the ban was raised on the export of pulpwood from Crown Lands, A. J. Bailey, president of Thompson-Heyland Lumber, stated that not as large quantities are being sent across the border as there would be if the freight rates from northern points were not so heavy. Shipments during the past month were steady from the north to points to Western New York State and Southern Ontario, but will not be as large during the remainder of 1936, as mills taking inventories do not want to have too heavy an investment in their "wood pile." There is also an absence of labor trouble in the bush this year which facilitates heavy production.

"Many timber areas in Ontario have been burned, not once, but several times," said Dr. C. D. Howe, Dean of the Faculty of Forestry, University of Toronto, in a recent address before the Engineering Institute of Canada. The fire burned out the binding materials in the soil, converting thousands of acres to bare land. About half of the commercial timber areas of Canada have been burned in the last quarter century. Dr. Howe was critical of the methods of pulpwood cutting which depletes the forest areas and causes an ever-receding boundary of the available timber supply. He said that it did not make much difference how many million square miles of forest Canada had if it was not commercially feasible to get the product to market. Dr. Howe pointed out if stability was to be gained in pulpwood operations, the amount of wood cut annually should not exceed the normal yearly growth. Scandinavian countries brought chemical pulp 3,000 miles to the American market and sold it cheaper than could Canadian mills, which were perhaps only 100 to 200 miles away. He attributed this to the application of human intelligence in increasing the production of timber areas in Scandinavian countries without depletion of the supply.

News of the Industry

The Hon. Peter Heenan, Minister of Lands and Forests for Ontario, was in Fort William recently and met the council of that city on questions relating to Fort William, and particularly to the re-opening of the mill of the Fort William Paper Company. At a recent meeting of the city council, Mr. Heenan stated that the opening of the mill had been under discussion, to manufacture paper other than plain newsprint. The cost of renovation of the machinery would run from $150,000 to $250,000. Mr. Heenan predicted extensive pulpwood operations in the near future. At present there were 300,000 cords contracted for and negotiations were being conducted for twice this amount. He was of the opinion that one million cords of pulpwood would be taken out of the Thunder Bay district next year.

Charles B. Shields, Toronto, vice-president of Loblaw Groceterias, Ltd., and a director of Canada Bread Company, Ltd., has been appointed a director of the Great Lakes Paper Company, Ltd., Port Arthur, Ont.

National Cellulose of Canada, Ltd., are removing from 579 Richmond street West, Toronto, to their new home at Weston Road and Clouston Avenue, Mount Dennis, where they will have considerably increased floor space.

Paper Business Generally Good In Boston

Demand for Various Grades of Fine Paper Active—Sulphite Bond Papers In Considerable Request — Coarse Paper Conditions Favorable — Tissues Moving Into Consumption Freely — Paper Stock Situation Stronger.

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., November 23, 1936—Paper jobbers in Metropolitan Boston enjoyed a good business generally during the week under review. In some cases, at least, it was very good. At the office of a firm handling both fine and wrapping papers, it was stated that a lot of nice orders had come in. At the New England headquarters of a fine paper manufacturing company, it was reported that it was "a pretty active week." The situation in regard to rag content papers is reported as somewhat confused, although prices are currently holding at present levels. Sulphite bond and mimeograph papers were in considerable demand. Box coverings continued to move well.

Favorable statements were made in regard to wrapping paper activity. Tissue lines continued lively. Price advances in tissues are expected, but the trade is reconciled to them. Box board business was good, with a substantial volume of orders on hand. It is felt that the peak for the fall has been reached, that the demand will begin to fall off the latter part of December, but resume the first of the coming year. Box board manufacturers are said to be in a very serious situation on account of the shortage of paper stock for making their product.

The paper stock market continued strong on all grades except roofing rags, which are beginning to show a little weakness, although no actual change in quotations has taken place. Manufacturers buying paper stock are resisting prices. It is said that unless they are obliged to buy, they will not do so, as they do not wish to have too many contracts on hand at the end of the year. Bagging is firmer, but it is difficult to effect sales.

Paper Merchants to Meet

At the second evening meeting of the New England Paper Merchants Association to be held tonight at the Hotel Touraine, John R. Campbell, Jr., Regional Representative for New England of the Federal Old Age Benefits Bureau is to speak on the Social Security Act and Old Age Benefits. Mr. Campbell has a background of many years' experience with the Metropolitan Life Insurance Company as Group Annuities Adviser for New England, and with his intimate knowledge of daily developments in State and Federal Bureaus, members are assured of a broad and informative address. A question period will follow to bring out specific answers to puzzling questions, such as classification of employees or keeping of clear and concise records. On account of the importance and timeliness of the meeting, the Divisional Meetings, which ordinarily come before the dinner, will come after the dinner and Mr. Campbell's discussion.

Mr. Campbell has informed the office of the New England Paper Merchants Association that the number of employees called for on the return form SS4 requires only an approximation. The sole purpose of this figure is to indicate how many employee application forms SS5 are to be provided for in each instance.

News of the Industry

The American Paper Box Company, 87 Richmond street, suffered a loss of $15,000 from smoke and water and slightly from the flames of a fire which broke out in an adjoining building late in the afternoon of November 17. All the damage was done to finished products, a fact which caused a delay in the delivery of orders, of which the firm had many. The loss was covered by insurance.

Miss Madeline Stavis, daughter of Louis E. Stavis, treasurer of the company was a heroine, remaining at her post at the telephone to notify various offices of the fire, although choking smoke was pouring into the office. She stayed at the telephone until everyone else in the office had left. Some seventy employees of the company went out of the building.

The Groveton Paper Company, Groveton, N. H., which has an office in this city, is operating days, nights and Sundays, with orders on hand up to at least December 15. Among the products of the company are sulphite bonds and mimeograph papers.

The Storrs & Bement Company has on exhibition an outstanding collection of fine printing, produced on the quality papers of the Worth Paper Company, of West Springfield, Mass. The showing comprises the best of the more recent fine books together with outstanding pieces used in the field of advertising and institutional publicity. The collection, in the new exhibit hall, has been shown since November 10 and will continue on display until December 10. Frederic W. Main and Herbert C. Ham, of the Worthy Paper Company, have been in attendance during several days of the exhibit.

Westvaco Inspirations No. 102 will soon be ready for distribution by the Arnold-Roberts Company. This company is running a series of unusual displays in the office windows at 58 High street.

Carter, Rice & Co., Corp. are stocking all items of Strathmore's newest line of Double Deckle, a paper distinguished by unique double deckles, one overlapping another with a harmonious color. This paper has smartness, appeal and attractiveness. It may be used for new effects in booklets, covers, broadsides and envelope enclosures. Double Deckle is made in sizes 25x38 and 12x38. There are two single deckles items (not duplex) in white and ivory, bookweight only, size 25x38, for the text of books or booklets, folders, etc. The price is moderate.

Alfred Klein, president of C. V. Mepfel, Rotterdam, Holland, a paper stock dealer, called on the trade last week, and Arthur Saxon, of the Rocky City Paper Box Company, a prominent paper box manufacturer of Nashville, Tenn., was in Boston a few days last week, visiting box plants.

Pennsylvania Salt Declares Extra

At the regular meeting of the board of directors of the Pennsylvania Salt Manufacturing Company held November 18, the following dividend action was taken:

A quarterly dividend of $1.00 per share, normally payable January 15, and an extra dividend of $2.25 per share were declared on the capital stock of the company, both payable December 15 to shareholders of record November 30.

Hereafter, the board of directors will consider Quarterly Dividends for payment March 15, June 15, September 15, and December 15.

★STONITE

*(Ebonite and Granulated Stone Composite U. S. Patent 1,787,890 Re. 18,111)

Smoothing Press

ROLLS

There must be something to it when at least one mill will junk practically new equipment to take advantage of the improvements that can be made with STONITE Smoothing Press Rolls. Briefly stated, here is what they will do:

1 Eliminate two-sidedness

2 Improve the surface finish

3 Send the sheet to the calendars levelled to uniform thickness and with irregularities broken down.

May we explain *why* STONITE Rolls can make this big improvement and tell you what they are doing in other mills on grades like yours? Write for the complete story.

STOWE-WOODWARD, INC.
NEWTON UPPER FALLS • MASSACHUSETTS
NEW YORK OFFICE • WOOLWORTH BUILDING

Makers of WHITE STAR *Rubber Covered Rolls,* TANNITE *Couch Rolls*
STONITE *Top Press and Smoothing Rolls—All by the* COREWELD *Process*

Scott Paper Co. Awards Bonus to Employees

Board of Directors Votes Special Organization Distribution to Approximately Nine Hundred Workers—Declares 25 Cents Extra Dividend Per Share on Common Stock in Addition to 50 Cents Regular Dividend.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., November 23, 1936—An organization distribution to be paid to approximately nine hundred employees on December 15 has been announced by Ralph E. Rhoads, secretary and personnel manager of the Scott Paper Company, who made the following statement:

"In consideration of the efforts, loyalty and efficiency of the company's entire organization in carrying out so effectively the policies of the management, the directors at a meeting held November 20 voted a special organization distribution to all employees excepting directors.

"This payment will be made at the same time as the dividend to stockholders (December 15, 1936), and employees of Scott Paper Company on the payroll at that time will receive a distribution on the following basis:

"Those employed before January 1, 1936 will receive one week's wages or salary, limited in the case of salaried employees to a payment of $60.00; and those employed after January 1, 1936, but before November 20, 1936, will receive one half of one week's wages or salary, limited in the case of salaried employees to a payment of $30.00.

"At the same meeting, the Board of Directors declared the regular dividend of fifty cents and an extra dividend of twenty-five cents per share on the common stock, payable on December 15, to stockholders of record December 3, 1936."

The Scott Paper Company operated at capacity during the depression and has provided continuous employment since 1921. It has reduced the hours of employment and, through its policy of periodic wage studies, has increased the general wage level to the point where its average wage is more than 30 per cent above the average for the paper industry, according to figures quoted by the company's personnel department.

During the year, the company added more than 10 per cent to the deposits of each employee in the Stock Purchase Fund, with more than 60 per cent of the employees participating. It also increased its contribution to the ScotTissue Beneficial Association, helping to defray a 20 per cent reduction in dues to all members. Fifty-four of the employees participated in formal educational courses at the expense of the company.

December 24, the company will hold its Annual Christmas Party at the Stanley Theatre, an event which has been repeated for more than twenty-five years. At this time, the employees take part in the entertainment for the amusement of their families. Toys and candy will be distributed to the children and parents. All employees will receive a cash award based on length of service, with special awards going to those who have served with the company for twenty-five years or more.

News of the Industry

With confidence increasing that the Christmas holiday period will be one of the best the paper trade—both fine and coarse—has experienced since 1930 or 1929, indications are that merchandising and promotional plans for that period, already completed, show substantial evidence of commitments on a very large scale.

In the waste paper industry it is reported there is a good demand to the extent that any surplus that has been around has been absorbed, and everything is being taken that is offered.

Heightened interest and enthusiasm characterized the second lecture in the series of the Paper Salesmen's Course, conducted by the Paper Trade Association of Philadelphia, and which was held on Thursday evening, November 19 in the Philadelphia Chamber of Commerce Building, 12th and Walnut streets, with A. H. Melville of State College presiding.

E. S. Ruddle, sales manager, Cuneo Eastern Press, Philadelphia, presented a vivid word picture of the history of printing. Flanked on all sides of the spacious room were samples of rare specimens of the printer's art. Mr. Ruddle outlined the background of the printing industry and very fully discussed the following: Early type and press work; Stages of development and improvement; Basic principles of reproduction and duplication by inkpaper and press; Fundamentals of printing; and also detailed explanation of printing—Job Printing—Color Printing—Publication and Book Printing—Newspapers.

At the conclusion of Mr. Ruddle's intensely interesting address, which occupied one hour and a half, Mr. Melville announced that those in the class who wished to ask Mr. Ruddle any questions were privileged to do so. A number of students took advantage of this opportunity and some very pertinent questions were asked, to which Mr. Ruddle very aptly replied.

Ormond Freile, vice-president of Paper Merchants Inc., and vice-president of the Paper Trade Association, stated that mimeograph pamphlets of the lectures would be supplied to those students only who could show a hundred per cent attendance record. Mrs. Doris E. Lewis, executive secretary of the Paper Trade Association of Philadelphia, expressed the opinion that the Course has more than justified its existence.

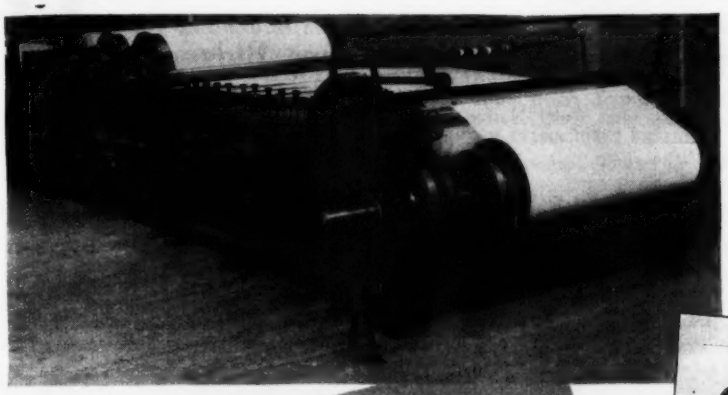
Appointment of Erwin, Wasey & Co., Inc., Philadelphia office, by Margaret Paper Company, Lansdowne, Pa., to direct the advertising and merchandising of M P C toilet tissue, household towels and napkins, has just been announced. Newspapers in general will be used with radio as a supplemental medium.

Not to Review Cellophane Case

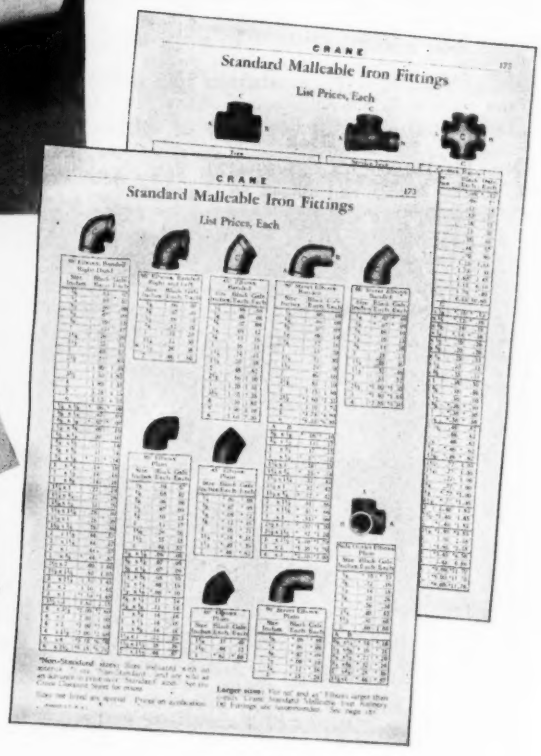
WASHINGTON, D. C., November 23, 1936.—The E. I. du Pont de Nemours & Co., of Wilmington, Del., lost in a suit involving alleged infringement of its trade mark rights in Cellophane, a cellulose product, before the Supreme Court here today. The court refused to review a judgment against the du Pont Company by the Circuit Court of Appeals.

The company, in its action against the Waxed Products Company, Inc., of New York, contended that the word "Cellophane" was coined in France in 1908, was registered in the United States in 1913 and has never been abandoned.

The Federal District Court held that the Waxed Products Company could not supply customers with goods not made by du Pont, unless the customer was informed that the product was not Cellophane. The Circuit Court modified the decree, permitting the sale of a competitive product provided the purchaser was given the name of the manufacturer.



Complete information on Crane Standard Malleable Iron Screwed Fittings is given on pages 171 to 179 inclusive, new Crane No. 52 Catalog.



UNIFORMLY DEPENDABLE

Made Right

OF THE

RIGHT MATERIAL

No detail has been overlooked in the design and manufacture of Crane Malleable Iron Screwed Fittings to provide uniformly high quality.

The fittings are well proportioned, of good weight and of great strength, providing a very liberal factor of safety. All openings are accurately threaded to gauge, are in true alignment. Each opening is chamfered slightly to permit easy entrance of the pipe. Because of their precision Crane Malleable Iron Screwed Fittings go into place naturally with no undue strains. The result is permanently tight joints quickly made up.

The Crane line of Standard Malleable Iron Screwed Fittings is unusually complete. It includes a great variety of types and a large assortment of reducing sizes.

Crane valves and fittings have been noted for over 80 years for their uniform high quality, unexcelled workmanship and precision. They yield handsome dividends in the form of long life and reduced maintenance. The Crane branch or distributor in your city carries a large, varied stock.

CRANE

CRANE CO., GENERAL OFFICES: 836 SO. MICHIGAN AVE., CHICAGO, ILL. • NEW YORK: 23 W. 44TH STREET

Branches and Sales Offices in One Hundred and Sixty Cities

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

Joint Printing Committee Opens Paper Bids

(Continued from page 17)

the grain to run the 38-inch way.

Cauthorne Paper Co.	5.18c
Walker, Goulard Plehn	5.68c
Whitaker Paper Co.	6.10c
R. P. Andrews Paper Co.	5.68c
Barton, Duer & Koch Paper Co.	5.68c
Fitchburg Paper Co.	5.68c
Aetna Paper Co.	5.68c
Stanford Paper Co.	5.68c
Paper Corp. of U. S.	5.68c

Offset Book

No. 16—120,000 lbs., 25x38—120; flat, cut 24x38, 26x32, and 38x48 in.; grain as ordered.

Cauthorne Paper Co.	5.68c
John F. Post, Inc.	5.79c
Reese & Reese, Inc.	5.93c
Walker, Goulard Plehn	5.89c
Whitaker Paper Co.	5.79c
R. P. Andrews Paper Co.	5.79c
Mathers-Lamm Paper Co.	5.82c
Barton, Duer & Koch Paper Co.	5.88c
Graham Paper Co.	5.94c
Fitchburg Paper Co.	5.89c
Aetna Paper Co.	5.79c
Old Dominion Paper Co.	5.898c
Stanford Paper Co.	5.72c
Paper Corp. of U. S.	5.79c

Antique Book

No. 17—100,000 lbs., 25x38—100 and 120; flat, cut 24x38, 33x43, and 38x50 ins.

Cauthorne Paper Co.	5.488c
John F. Post, Inc.	5.41c
Reese & Reese, Inc.	5.55c
Walker, Goulard Plehn	5.46c
Whitaker Paper Co.	5.51c
R. P. Andrews Paper Co.	5.46c
Barton, Duer & Koch Paper Co.	5.41c
Fitchburg Paper Co.	5.46c
Aetna Paper Co.	5.41c
Stanford Paper Co.	5.46c
Paper Corp. of U. S.	5.41c

Lightweight Machine-Finish Book

No. 18—60,000 lbs., 25x38—60; flat, cut 32x48 and 38x48 ins.

Walker, Goulard Plehn	6.41c
Whitaker Paper Co.	6.51c
Barton, Duer & Koch Paper Co.	6.57c
Fitchburg Paper Co.	6.41c
Stanford Paper Co.	6.41c

50 Per Cent Rag Lightweight High Machine-Finish Book

No. 19—20,000 lbs., 25x38—60; flat, cut 32x48 and 38x48 ins.

Whitaker Paper Co.	12.15c
R. P. Andrews Paper Co.	11.95c
Old Dominion Paper Co.	11.439c

50 Per Cent Rag Machine-Finish Book

No. 20—80,000 lbs., 25x38—80; flat, cut 32x48 and 38x48 ins.

Whitaker Paper Co.	9.71c
Aetna Paper Co.	9.338c
Old Dominion Paper Co.	9.167c

No. 21—70,000 lbs., 25x38—80; flat, cut 22¾x31½, 29x41 and 31½x45½ ins.

Whitaker Paper Co.	9.71c
Aetna Paper Co.	9.338c
Old Dominion Paper Co.	9.167c

No. 22—60,000 lbs., 25x38—90; flat, cut any size, min. width 24 ins., max. width 42 ins.

Whitaker Paper Co.	9.61c
Aetna Paper Co.	8.788c
Old Dominion Paper Co.	9.064c

75 Per Cent Rag Laid Antique Book

No. 23—10,000 lbs., 25x38—140; flat, cut 24x38 and 29x41 ins.; the laid marks to run the 24-inch direction of the sheet; the grain and chain marks to run lengthwise of the sheet.

Whitaker Paper Co.	12.12c
R. P. Andrews Paper Co.	11.50c
Aetna Paper Co.	11.088c

100 Per Cent Rag Machine-Finish Book

No. 24—5,000 lbs., 25x38—90; flat, cut 24x38 and 38x48 ins.; the grain to run lengthwise of the sheet. Min. order 5,000 lbs.

Whitaker Paper Co.	17.25c
R. P. Andrews Paper Co.	17.25c
Mathers-Lamm Paper Co.	24.00c
Barton, Duer & Koch Paper Co.	19.50c
Lee Paper Co.	15.87c

No. 25—20,000 lbs., 25x38—140; flat, cut 24x38 and 38x48 ins.; the grain to run lengthwise of the sheet; min. order 10,000 lbs.

Whitaker Paper Co.	17.25c
R. P. Andrews Paper Co.	17.25c
Mathers-Lamm Paper Co.	24.00c
Barton, Duer & Koch	19.50c
Lee Paper Co.	15.87c

Supercalendered Book

No. 26—40,000 lbs., 25x38—90; flat, cut 32x48 ins. Min. order 10,000 lbs.

Whitaker Paper Co.	5.80c
R. P. Andrews Paper Co.	5.75c
Barton, Duer & Koch Paper Co.	5.70c
Dobler & Mudge	5.70c
Stanford Paper Co.	5.75c
Paper Corp. of U. S.	5.70c

No. 27—200,000 lbs., 25x38—90; flat, cut 31¼x45½ ins.

Whitaker Paper Co.	5.70c
R. P. Andrews Paper Co.	5.74c
Barton, Duer & Koch Paper Co.	5.70c
Dobler & Mudge	5.70c
Stanford Paper Co.	5.75c
Paper Corp. of U. S.	5.70c

No. 28—500,000 lbs., 25x38—90; flat, cut 24x38 and 38x48 ins.

Whitaker Paper Co.	5.70c
R. P. Andrews Paper Co.	5.70c
Barton, Duer & Koch Paper Co.	5.70c
Dobler & Mudge	5.70c
Stanford Paper Co.	5.75c
Paper Corp. of U. S.	5.70c

No. 29—100,000 lbs., 25x38—90; rolls, 38 ins. wide (3-inch iron cores).

Whitaker Paper Co.	5.34c
R. P. Andrews Paper Co.	5.34c
Barton, Duer & Koch Paper Co.	5.39c
Dobler & Mudge	5.34c
Stanford Paper Co.	5.34c
Paper Corp. of U. S.	5.34c

No. 30—100,000 lbs., 25x38—90; rolls, 28½ and 38 ins. wide (3-inch iron cores).

Perkins Goodwin Co.	5.34c
Whitaker Paper Co.	5.34c
R. P. Andrews Paper Co.	5.39c
Barton, Duer & Koch Paper Co.	5.42c
Dobler & Mudge	5.34c
Stanford Paper Co.	5.34c
Paper Corp. of U. S.	5.34c

50 Per Cent Rag Supercalendered Book

No. 33—10,000 lbs., 25x38—90; flat, cut 32x48 ins. Min. order, 10,000 lbs.

Whitaker Paper Co.	10.30c

Halftone Book

No. 34—250,000 lbs., 25x38—140; flat, cut 24x38 and 38x48 ins.

John F. Post, Inc.	5.92c
Walker, Goulard Plehn	6.02c
Whitaker Paper Co.	5.92c
R. P. Andrews Paper Co.	5.92c
Barton, Duer & Koch Paper Co.	5.92c
Fitchburg Paper Co.	6.02c
Stanford Paper Co.	5.97c
Paper Corp. of U. S.	5.92c

Single-Coated Book

No. 35—500,000 lbs., 25x38—140; flat, cut 29x41, 38x48 and 41x52 ins.; the grain to run lengthwise of the sheet.

John F. Post, Inc.	6.54c
Whitaker Paper Co.	6.86c
R. P. Andrews Paper Co.	7.01c
Enterprise Paper Co.	6.97c
Dobler & Mudge	6.86c
Stanford Paper Co.	6.86c

Double-Coated Book

No. 36—90,000 lbs., 25x38—140 and 160; flat, cut 24x32, 24x38 and 38x48 ins.; the grain to run lengthwise of the sheet.

John F. Post, Inc.	7.51c
Whitaker Paper Co.	7.83c
R. P. Andrews Paper Co.	7.98c
Enterprise Paper Co.	7.75c
Dobler & Mudge	7.83c
Stanford Paper Co.	7.83c

50 Per Cent Rag Double-Coated Book

No. 37—60,000 lbs., 25x38—140 and 160; flat, cut 24x32, 24x38, 32x42, 38x48, and 41x52 ins.; the grain to run lengthwise of the sheet.

No bid.

50 Per Cent Rag Machine-Finish Lithograph

No. 40—10,000 lbs., 25x38—160; flat, cut 26x38 ins.; the grain to run lengthwise of the sheet.

Whitaker Paper Co.	10.23c
R. P. Andrews Paper Co.	9.99c
Barton, Duer & Koch Paper Co.	11.50c
Aetna Paper Co.	9.338c

Mimeograph, White and Colored

No. 43—1,500,000 lbs., white, Nos. 40 and 48; flat, cut 24½x30½, 24½x32, 24½x38, 26x42½, and 28½x34½ ins.; the grain to run lengthwise of the sheet.

John F. Post, Inc.	5.58c
Whitaker Paper Co.	5.58c
R. P. Andrews Paper Co.	5.58c
Barton, Duer & Koch Paper Co.	5.14c
Aetna Paper Co.	5.48c
Paper Corp. of U. S.	5.23c

No. 44—200,000 lbs., blue, buff, green, pink, and yellow, No. 40; flat, cut 24½x30½, 24½x32, 24½x38 and 26x42½ ins.; the grain to run lengthwise of the sheet. Min. order, one color, 10,000 lbs.

John F. Post, Inc.	6.55c
Barton, Duer & Koch Paper Co.	5.89c
Aetna Paper Co.	6.20c
Paper Corp. of U. S.	6.20c

25 Per Cent Rag Mimeograph

No. 47—2,000,000 lbs., Nos. 40 and 48; flat, cut 24½x30½, 24½x38, 26x42½, and 28½x34½ ins.; the grain to run lengthwise of the sheet.

R. P. Andrews Paper Co.	11.64c
Aetna Paper Co.	6.238c
Stanford Paper Co.	8.25c

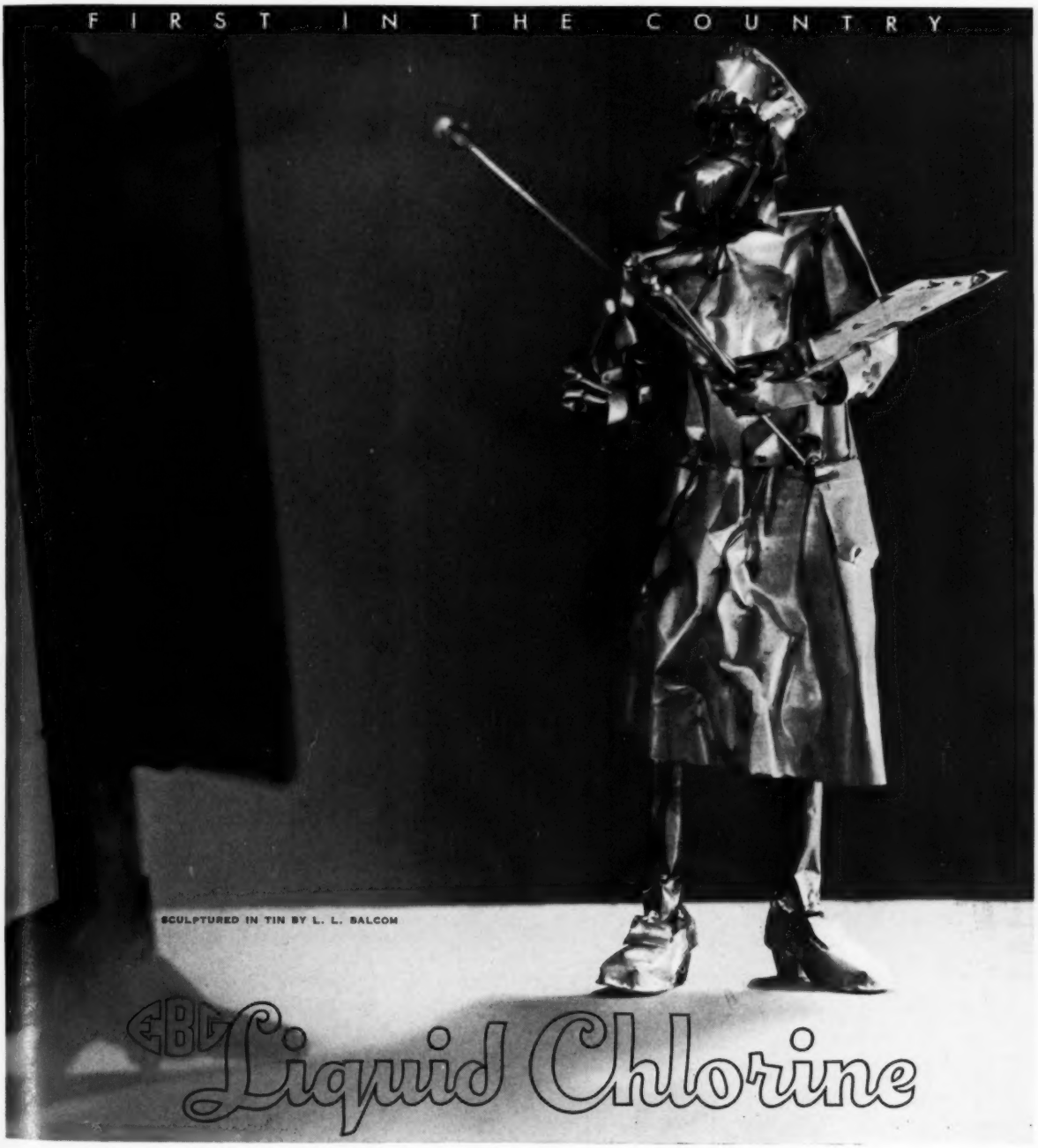
Blue U S M O Safety Writing

No. 51—300,000 lbs., No. 32; rolls, 11 and 22 ins. wide, 24 ins. in diameter (3-inch iron cores).

Perfect Safety Paper Co.	9.25c
Geo. LaMonte & Sons	9.43c

HISTORY has presented the world with few men as versatile as the great Leonardo da Vinci. Many know him as painter, sculptor, architect, writer and philosopher. Few realize that he was also one of the world's pioneer sanitary engineers. How Leonardo, the sanitary engineer, would have hailed the work of EBG pioneers when they first produced Liquid Chlorine in America — and adapted it to the sterilization of water and treatment of sewage! But EBG, like Leonardo, did not stop at one accomplishment. They went on to conquer other fields — the bleaching of textiles, pulp and paper, shellac and other products which, as a result, have found greater value and usefulness. As with the artist, the ability to do one thing well has given EBG the courage and ability to do other things equally well.

ELECTRO BLEACHING GAS COMPANY, MAIN OFFICE: 60 EAST 42nd STREET, NEW YORK, N. Y. PLANT: NIAGARA FALLS, N. Y.



U S M O Writing, White and Blue

No. 52—8,000 lbs., No. 32; rolls, 8½ inches wide, 24 ins. in diameter (3-inch iron cores). Min. order, either color, 4,000 lbs.

No bid.

Safety Writing, Colored

No. 53—4,000 lbs., blue, gray, green, pink, salmon, and yellow, No. 40; flat, cut 17x28, 21x32, and 22x34 ins. Min. order, one color, 2,000 lbs.

Perfect Safety Paper Co.	11.60c
Whitaker Paper Co.	11.75c
Mathers-Lamm Paper Co.	10.91c

Sulphite Writing, White and Colored

No. 55—1,500,000 lbs., white, No. 32; flat, cut any size, min. width 21 ins., max. width 34 ins.

John F. Post, Inc.	5.53c
Whitaker Paper Co.	5.57c
Barton, Duer & Koch Paper Co.	5.23c
Virginia Paper Co.	5.23c
Aetna Paper Co.	6.03c
Paper Corp. of U. S.	5.23c

No. 56—2,500,000 lbs., white, Nos. 40 and 48; flat, cut any size, min. width 21 ins., max width 34 ins.

John F. Post, Inc.	5.53c
Whitaker Paper Co.	5.57c
Barton, Duer & Koch Paper Co.	5.19c
Virginia Paper Co.	5.23c
Aetna Paper Co.	5.03c
Paper Corp. of U. S.	5.23c

No. 57—40,000 lbs., white, No. 26; rolls, min. width 16 ins., max width 38 ins. (3-inch iron cores).

Whitaker Paper Co.	6.33c
Barton, Duer & Koch Paper Co.	6.23c
Virginia Paper Co.	6.36c
Aetna Paper Co.	6.36c
Paper Corp. of U. S.	6.33c

No. 58—300,000 lbs., white, No. 32; rolls, min. width 16 ins., max. width 38 ins. (3-inch iron cores).

John F. Post, Inc.	5.13c
Whitaker Paper Co.	4.99c
Barton, Duer & Koch Paper Co.	4.92c
Virginia Paper Co.	4.99c
Aetna Paper Co.	5.49c
Paper Corp. of U. S	4.99c

No. 59—150,000 lbs., white, Nos. 40 and 48; rolls, min. width 16 ins., max. width 38 ins. (3-inch iron cores).

John F. Post, Inc.	5.13c
Whitaker Paper Co.	4.99c
Barton, Duer & Koch	4.88c
Virginia Paper Co.	4.99c
Aetna Paper Co.	5.49c
Paper Corp. of U. S.	4.99c

No. 60—40,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 26; flat, cut any size, min. width 21 ins., max. width 34 ins. Min. order, one color, 5,000 lbs.

Whitaker Poper Co.	7.88c
Virginia Paper Co.	7.43c
Aetna Paper Co.	7.43c
Paper Corp. of U. S.	7.88c

No. 61—750,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, Nos. 32 and 40; flat, cut any size, min. width 21 ins., max. width 34 ins. Min. order, one color, 10,000 lbs.

Cauthorne Paper Co.	6.478c
John F. Post, Inc.	6.48c
Whitaker Paper Co.	6.54c
Virginia Paper Co.	6.20c
Aetna Paper Co.	6.20c
Paper Corp. of U. S.	6.20c

100 Per Cent Rag White Writing

No. 63—2,500 lbs., No. 56; flat, cut 21x32 ins. Min. order 2,500 lbs.

Walker, Goulard Plehn	32.40c
Whitaker Paper Co.	28.00c
R. P. Andrews Paper Co.	25.20c
Mathers-Lamm Paper Co.	32.40c
Barton, Duer & Koch Paper Co.	22.88c
Lee Paper Co.	21.19c
Old Dominion Paper Co.	21.949c

Lithograph-Finish Map

No. 64—20,000 lbs., Nos. 32 and 40; flat, cut 24x38, 30x40, 32x48, 36x52, and 38x48 ins. Min. order, one substance, 5,000 lbs.

Paper Corp. of U. S.	5.57c

50 Per Cent Rag Lithograph-Finish Map

No. 65—30,000 lbs., Nos. 40, 48 and 56; flat, cut any size, min. width 22 ins., max. width 48 ins.; the grain to run lengthwise of the sheet.

Reese & Reese, Inc.	11.84c
R. P. Andrews Paper Co.	13.90c
Barton, Duer & Koch Paper Co.	11.41c
J. W. Butler Paper Co.	11.897c
Whiting & Co., Inc.	12.66c
Aetna Paper Co.	11.43c
Stanford Paper Co.	11.25c

75 Per Cent Rag Lithograph-Finish Map

No. 66—100,000 lbs., Nos. 32 and 40; flat, cut any size, min. width 24 ins., max. width 48 ins.; the grain to run lengthwise of the sheet.

Reese & Reese, Inc.	13.61c
R. P. Andrews Paper Co.	19.60c
Barton, Duer & Koch Paper Co.	13.97c
Lee Paper Co.	14.86c
J. W. Butler Paper Co.	13.784c
Whiting & Co., Inc.	14.62c
Aetna Paper Co.	16.47c
Mudge Paper Co.	15.00c

No. 67—60,000 lbs., Nos. 48 and 56; flat, cut any size, min. width 30 ins., max. width 48 ins.; the grain to run lengthwise of the sheet. Min. order, one substance, 5,000 lbs.

Reese & Reese Inc.	13.61c
R. P. Andrews Paper Co.	19.60c
Barton Duer & Koch Paper Co.	13.77c
Lee Paper Co.	14.86c
J. W. Butler Paper Co.	13.784c
Whiting & Co. Inc.	14.62c
Aetna Paper Co.	15.47c
Mudge Paper Co.	14.75c

100 Per Cent Rag White Chart, Lithograph-Finish

No. 69—60,000 lbs., No. 96; flat, cut any size, min. width 22 ins., max. width 46 ins.; 4-inch band around each 500 sheets; the grain to run lengthwise of the sheet unless otherwise specified.

Reese & Reese Inc.	22.50c
R. P. Andrews Paper Co.	22.47c
Lee Paper Co.	20.73c

Sulphite Manifold, White and Colored

No. 70—150,000 lbs., white, No. 18; flat, cut 21x32, 22x34, and 28x34 ins.; the grain to run the 21-inch way on the 21x32-inch size.

Import Paper Co.	6.90c
Whitaker Paper Co.	7.96c
Graham Paper Co.	6.65c

No. 71—30,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 18; flat, cut 21x32, 22x34, and 28x34 ins.; the grain to run the 21-inch way on the 21x32-inch size. Min. order, one color, 5,000 lbs.

Import Paper Co.	7.90c
Whitaker Paper Co.	8.96c

50 Per Cent Rag Manifold, White and Colored

No. 73—50,000 lbs., white, No. 14; flat, cut 21x32, 22x34, 28x34 and 38x48 ins.; the grain to run the 21-inch way on the 21x32-inch size. Min. order 5,000 lbs.

R. P. Andrews Paper Co.	18.91c
Barton Duer & Koch Paper Co.	18.75c

No. 74—400,000 lbs., white, No. 18; flat, cut 21x32, 22x34, 24x38 and 28x34 ins.; the grain to run the 21-inch way on the 21x32-inch size.

R. P. Andrews Paper Co.	16.97c
Barton Duer & Koch Paper Co.	14.14c
Lee Paper Co.	13.11c
Old Dominion Paper Co.	15.87c

No. 75—20,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 14; flat, cut 21x32, 22x34, and 28x34 ins.; the grain to run the 21-inch way on the 21x32-inch size. Min. order, one color, 3,000 lbs.

R. P. Andrews Paper Co.	20.60c
Barton Duer & Koch Paper Co.	20.80c

No. 76—160,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 18; flat, cut 21x32, 22x34, 24x38 and 28x34 ins.; the grain to run the 21-inch way on the 21x32-inch size. Min. order, one color, 5,000 lbs.

R. P. Andrews Paper Co.	16.47c
Barton Duer & Koch Paper Co.	15.95c
Lee Paper Co.	14.66c
Old Dominion Paper Co.	16.37c

100 Per Cent Rag Manifold, White and Colored

No. 78—5,000 lbs., white, No. 14; flat, cut 17x28, 19x24, 21x32, and 22x34 ins.; the grain to run the 21-inch way on the 21x32-inch size. Min. order 5,000 lbs.

Whitaker Paper Co.	38.64c
R. P. Andrews Paper Co.	32.00c
Barton Duer & Koch Paper Co.	32.85c
Old Dominion Paper Co.	38.819c

No. 79—30,000 lbs., white, No. 18; flat, cut 17x28, 19x24, 21x32 and 22x34 ins.; the grain to run the 21-inch way on the 21x32-inch size. Min. order 5,000 lbs.

Whitaker Paper Co.	29.78c
R. P. Andrews Paper Co.	28.00c
Barton Duer & Koch Paper Co.	27.75c
Lee Paper Co.	25.92c
Old Dominion Paper Co.	28.369c

50 Per Cent Rag White Glazed Manifold

No. 83—100,000 lbs., No. 16; flat, cut 19x24 and 21x32 ins.; the grain to run the 21-inch way on the 21x32-inch size. Min. order 20,000 lbs.

Barton Duer & Koch Paper Co.	16.31c
Dobler & Mudge	17.28c
Lee Paper Co.	16.15c
Old Dominion Paper Co.	16.50c

Sulphite Bond, White and Colored

No. 101—5,000 lbs., white, No. 26; flat, cut any size; min. width 21 ins.; max. width 34 ins. Min. order 5,000 lbs.

Whitaker Paper Co.	7.90c
Barton Duer & Koch Paper Co.	7.51c
Aetna Paper Co.	7.06c

No. 102—750,000 lbs., white, Nos. 32 and 40; flat, cut any size, min. width 21 ins.; max. width 34 ins.

Cauthorne Paper Co.	6.238c
John F. Post, Inc.	6.04c
Reese & Reese Inc.	6.30c
Whitaker Paper Co.	6.04c
Barton Duer & Koch Paper Co.	5.72c
Aetna Paper Co.	6.17c
Paper Corp. of U. S.	5.72c

No. 103—5,000 lbs., white, No. 48; flat, cut any size, min. width 21 ins., max. width 34 ins. Min. order 5,000 lbs.

Whitaker Paper Co.	6.54c
Barton Duer & Koch Paper Co.	6.14c
Aetna Paper Co.	6.17c

No. 104—6,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, Nos. 32 and 40; flat, cut any size, min. width 21 ins., max width 34 ins. Min. order, one substance, one color, 2,000 lbs.

Whitaker Paper Co.	7.94c
Aetna Paper Co.	6.69c

25 Per Cent Rag Bond, White and Colored

No. 109—350,000 lbs., white, No. 26; flat, cut any size, min. width 21 ins., max. width 34 ins.

Walker Goulard Plehn	14.06c
R. P. Andrews Paper Co.	14.32c
Barton Duer & Koch Paper Co.	10.80c
Whiting & Co. Inc.	10.50c
Aetna Paper Co.	9.578c
Stanford Paper Co.	12.00c

No. 110—400,000 lbs., white, No. 32; flat, cut any size, min. width 21 ins., max. width 34 ins.

Walker Goulard Plehn	11.25c
R. P. Andrews Paper Co.	11.64c
Mathers-Lamm Paper Co.	11.00c
Barton Duer & Koch Paper Co.	9.45c
Whiting & Co. Inc.	10.50c
Aetna Paper Co.	8.348c
Stanford Paper Co.	9.75c

No. 111—1,000,000 lbs., white, No. 40; flat, cut any size, min. width 21 ins., max. width 34 ins.

Reese & Reese Inc.	8.41c
Walker Goulard Plehn	11.25c
R. P. Andrews Paper Co.	8.99c
Mathers-Lamm Paper Co.	11.00c
Barton Duer & Koch Paper Co.	9.23c
J. W. Butler Paper Co.	8.459c
Whiting & Co., Inc.	10.50c
Aetna Paper Co.	7.738c
Stanford Paper Co.	9.50c

No. 112—1,000,000 lbs., white, No. 40; flat, cut any size, min. width 21 ins., max. width 34 ins.

Marquette Paper Co.	9.23c
Reese & Reese Inc.	8.38c
Walker Goulard Plehn	11.25c
R. P. Andrews Paper Co.	8.99c
Mathers-Lamm Paper Co.	11.00c
Barton Duer & Koch Paper Co.	11.64c
J. W. Butler Paper Co.	8.429c
Whiting & Co., Inc.	10.50c
Aetna Paper Co.	7.738c
Stanford Paper Co.	9.50c

No. 113—250,000 lbs., white, No. 48; flat, cut any size, min. width 21 ins., max. width 34 ins.

Marquette Paper Co.	8.93c
Reese & Reese Inc.	8.66c
Walker, Goulard Plehn	11.25c
R. P. Andrews Paper Co.	11.64c
Mathers-Lamm Paper Co.	11.00c
Barton, Duer & Koch Paper Co.	11.64c
J. W. Butler Paper Co.	8.773c
Whiting & Co. Inc.	10.50c
Aetna Paper Co.	7.988c
Stanford Paper Co.	9.50c

No. 114—500,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 26; flat, cut any size, min. width 21 ins., max. width 34 ins. Min. order, one color, 5,000 lbs.

Marquette Paper Co.	10.90c
Walker, Goulard Plehn	14.68c
R. P. Andrews Paper Co.	15.32c
Barton, Duer & Koch Paper Co.	15.32c
Whiting & Co. Inc.	10.50c
Aetna Paper Co.	8.978c
Stanford Paper Co.	12.10c

No. 115—400,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 32; flat, cut any size, min. width 21 ins., max. width 34 ins.

Walker, Goulard Plehn	11.75c
R. P. Andrews Paper Co.	12.64c
Mathers-Lamm Paper Co.	11.50c
Barton, Duer & Koch Paper Co.	9.38c
Whiting & Co. Inc.	10.50c
Aetna Paper Co.	8.468c
Stanford Paper Co.	9.85c

No. 116—300,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 40; flat, cut any size, min. width 21 ins., max. width 34 ins.

Reese & Reese Inc.	8.91c
Walker, Goulard Plehn	11.75c
R. P. Andrews Paper Co.	12.64c
Mathers-Lamm Paper Co.	11.50c
Barton, Duer & Koch Paper Co.	9.33c
J. W. Butler Paper Co.	9.031c
Whiting & Co. Inc.	10.50c
Aetna Paper Co.	8.198c
Stanford Paper Co.	9.60c

No. 117—80,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, No. 48; flat, cut any size, min. width 21 ins., max. width 34 ins.

Reese & Reese Inc.	9.17c
Walker, Goulard Plehn	11.75c
R. P. Andrews Paper Co.	12.64c
Mathers-Lamm Paper Co.	11.50c
Barton, Duer & Koch Paper Co.	9.23c
J. W. Butler Paper Co.	9.289c
Whiting & Co. Inc.	10.50c
Aetna Paper Co.	8.568c
Stanford Paper Co.	9.60c

50 Per Cent Rag Bond, White and Colored

No. 120—50,000 lbs., white, No. 26; flat, cut any size, min. width 21 ins., max. width 34 ins.

Walker, Goulard Plehn	16.87c
R. P. Andrews Paper Co.	17.30c
Mathers-Lamm Paper Co.	14.65c
Barton, Duer & Koch Paper Co.	12.75c
Graham Paper Co.	14.80c
Whiting & Co. Inc.	12.65c
Aetna Paper Co.	11.178c
Stanford Paper Co.	14.45c

No. 121—700,000 lbs., Nos. 32 and 40; flat, cut any size, min. width 21 ins., max. width 34 ins.

Reese & Reese Inc.	10.61c
Walker, Goulard Plehn	13.50c
R. P. Andrews Paper Co.	14.06c
Mathers-Lamm Paper Co.	13.23c
Barton, Duer & Koch Paper Co.	10.46c
Graham Paper Co.	12.15c
J. W. Butler Paper Co.	10.783c
Whiting & Co. Inc.	12.65c
Aetna Paper Co.	9.228c
Stanford Paper Co.	11.75c

No. 122—100,000 lbs, white, No. 48; flat, cut any size, min. width 21 ins., max. width 34 ins.

Reese & Reese Inc.	10.89c
Walker, Goulard Plehn	13.50c
R. P. Andrews Paper Co.	14.06c
Mathers-Lamm Paper Co.	13.23c
Barton, Duer & Koch Paper Co.	10.24c
J. W. Butler Paper Co.	11.041c
Whiting & Co. Inc.	12.65c
Aetna Paper Co.	9.228c
Stanford Paper Co.	11.75c

No. 123—60,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, Nos. 26, 32 and 40; flat, cut any size, min. width 21 ins., max. width 34 ins. Min. order, one color, one substance, 2,500 lbs.

Reese & Reese Inc.	10.89c[1]
Walker, Goulard Plehn	17.50c[1]
	14.00c[2]
R. P. Andrews Paper Co.	18.30c[1]
	15.06c[2]
Mathers Lamm Paper Co.	13.73c[1]
Barton, Duer & Koch Paper Co.	12.96c[1]
	11.96c[2]
Graham Paper Co.	18.12c[1]
	14.72c[2]
J. W. Butler Paper Co.	11.041c[1]
	11.041c[2]
Whiting & Co., Inc.	12.65c[1]
	12.65c[2]
Aetna Paper Co.	10.238c[1]
	9.9978c[2]

[1] No. 26
[2] No. 32 and 40.

75 Per Cent Rag White Bond

No. 125—2,500 lbs., No. 26; flat, cut any size, min. width 21 ins., max. width 32 ins. Min. order 2,500 lbs.

Walker, Goulard Plehn	23.62c
R. P. Andrews Paper Co.	24.47c
Mathers-Lamm Paper Co.	20.98c
Graham Paper Co.	24.57c

No. 126—2,500 lbs., Nos. 32, 40, and 48; flat, cut any size, min. width 21 ins., max. width 32 ins. Min. order, one substance, 2,500 lbs.

Walker, Goulard Plehn	18.90c
Whitaker Paper Co.	21.00c
R. P. Andrews Paper Co.	19.88c
Mathers-Lamm Paper Co.	17.50c
Graham Paper Co.	19.88c
Old Dominion Paper Co.	19.969c

100 Per Cent Rag White Bond

No. 128—6,000 lbs., Nos. 32 and 40; flat, cut any size, min. width 16 ins., max. width 32 ins. Min. order, one substance, 2,000 lbs.

Walker, Goulard Plehn	32.15c
Whitaker Paper Co.	26.67c
R. P. Andrews Paper Co.	34.43c
Mathers-Lamm Paper Co.	26.67c
Barton, Duer & Koch Paper Co.	22.40c
Graham Paper Co.	26.67c
Old Dominion Paper Co.	21.749c

No. 129—5,000 lbs., No. 48; flat, cut any size, min. width 16 ins., max. width 32 ins. Min. order 2,000 lbs.

Walker, Goulard Plehn	32.15c
Whitaker Paper Co.	26.67c
R. P. Andrews Paper Co.	34.43c
Mathers-Lamm Paper Co.	26.67c
Barton, Duer & Koch Paper Co.	22.40c
Graham Paper Co.	26.67c
Old Dominion Paper Co.	21.749c

100 Per Cent Rag Declaration Bond

No. 140—3,000 lbs., Nos. 32 and 40; flat, cut 17x22 and 22x25½ ins. Min. order, one substance, 3,000 lbs.

Walker, Goulard Plehn	32.15c
Mathers-Lamm Paper Co.	31.80c
Old Dominion Paper Co.	22.747c

100 Per Cent Rag Parchment Deed

No. 141—2,000 lbs., No. 64; flat, cut 33x34 ins. Min. order 2,000 lbs.

Walker, Goulard Plehn	32.15c
R. P. Andrews Paper Co.	25.20c
Mathers-Lamm Paper Co.	31.80c
Barton, Duer & Koch Paper Co.	23.40c
Old Dominion Paper Co.	21.749c

Sulphite Ledger, White and Colored

No. 151—170,000 lbs., white, Nos. 56 and 64; flat, cut any size, min. width 17 ins., max. width 32 ins. Min. order, one substance, 10,000 lbs.

Whitaker Paper Co.	7.04c
Barton, Duer & Koch Paper Co.	6.68c
Virginia Paper Co.	6.42c
Aetna Paper Co.	6.54c

Old Dominion Paper Co.	6.763c
Mudge Paper Co.	6.88c
Paper Corp. of U. S.	6.54c

No. 152—10,000 lbs., white, No. 80; flat, cut any size, min. width 17 ins., max. width 32 ins. Min. order 10,000 lbs.

Whitaker Paper Co.	7.11c
Barton, Duer & Koch Paper Co.	6.73c
Aetna Paper Co.	6.54c
Old Dominion Paper Co.	6.768c
Mudge Paper Co.	6.88c

No. 153—2,000 lbs., blue, buff, green, pink, salmon and yellow, No. 80; flat, cut 21x32½ ins. Min. order, one color, 2,000 lbs.

Whitaker Paper Co.	8.51c
Aetna Paper Co.	7.51c

25 Per Cent Rag Ledger, White and Colored

No. 154—30,000 lbs., white, Nos. 48 and 56; flat, cut 20x28, 21x32, 24x38, 28x29 and 28x34 ins. Min. order, one substance, 5,000 lbs.

Reese & Reese Inc.	9.35c
Walker, Goulard Plehn	12.08c
R. P. Andrews Paper Co.	12.85c
Mathers-Lamm Paper Co.	11.95c
Barton, Duer & Koch Paper Co.	9.16c
Dobler & Mudge	10.00c
J. W. Butler Paper Co.	9.454c
Whiting & Co. Inc.	10.75c
Aetna Paper Co.	8.888c

No. 155—5,000 lbs., white, No. 64; flat, cut 21x32 and 25x36 ins. Min. order, 5,000 lbs.

Reese & Reese Inc.	9.69c
Walker, Goulard Plehn	12.08c
R. P. Andrews Paper Co.	12.85c
Mathers-Lamm Paper Co.	11.95c
Barton, Duer & Koch Paper Co.	9.56c
Dobler & Mudge	10.00c
J. W. Butler Paper Co.	9.711c
Whiting & Co. Inc.	10.75c
Aetna Paper Co.	9.088c

No. 156—10,000 lbs., white, No. 72; flat, cut 20x28, 21x32, 24x38, and 28x34 ins. Min. order 5,000 lbs.

Reese & Reese Inc.	9.69c
Walker, Goulard Plehn	12.08c
R. P. Andrews Paper Co.	12.85c
Mathers-Lamm Paper Co.	11.95c
Barton, Duer & Koch Paper Co.	9.56c
Dobler & Mudge	10.00c
J. W. Butler Paper Co.	9.711c
Whiting & Co. Inc.	10.75c
Aetna Paper Co.	9.088c

No. 157—15,000 lbs., blue, buff, green, pink, salmon and yellow, Nos. 56, 64, and 72; flat, cut 21x32, 23x36, 24x38, 26x36, and 28x34 ins. Min. order, one substance, one color, 3,000 lbs.

Reese & Reese Inc.	9.94c
Walker, Goulard Plehn	12.58c
R. P. Andrews Paper Co.	13.85c
Mathers-Lamm Paper Co.	12.44c
Barton, Duer & Koch Paper Co.	9.85c
J. W. Butler Paper Co.	9.969c
Whiting & Co. Inc.	10.75c
Aetna Paper Co.	9.288c

50 Per Cent Rag Ledger, White and Colored

No. 160—150,000 lbs., white, Nos. 48 and 56; flat cut 18½x36, 18½x40¼, 20x28, 21x32, 24x38, 28x29, and 28x34 ins. Min. order, one substance, 10,000 lbs.

Reese & Reese Inc.	10.86c
Walker, Goulard Plehn	14.32c
R. P. Andrews Paper Co.	15.52c
Mathers-Lamm Paper Co.	14.03c
Barton, Duer & Koch Paper Co.	10.37c
Dobler & Mudge	12.70c
J. W. Butler Paper Co.	10.990c
Whiting & Co. Inc.	12.65c
Aetna Paper Co.	9.228c

No. 161—30,000 lbs., white, No. 64; flat, cut 21x32 and 23x36 ins. Min. order 10,000 lbs.

Reese & Reese Inc.	11.11c
Walker, Goulard Plehn	14.32c
R. P. Andrews Paper Co.	15.52c
Mathers-Lamm Paper Co.	14.03c
Barton, Duer & Koch Paper Co.	10.17c
Graham Paper Co.	14.72c
Dobler & Mudge	12.70c
J. W. Butler Paper Co.	11.247c
Whiting & Co. Inc.	12.65c
Aetna Paper Co.	9.328c

No. 162—60,000 lbs., white, Nos. 72 and 80; flat, cut 20x28, 21x32, 24x38, and 28x34 ins. Min. order 10,000 lbs.

Reese & Reese Inc.	10.86c
Walker, Goulard Plehn	14.32c
R. P. Andrews Paper Co.	15.52c
Mathers-Lamm Paper Co.	14.03c
Barton, Duer & Koch Paper Co.	10.17c
Graham Paper Co.	14.72c
Dobler & Mudge	12.70c
J. W. Butler Paper Co.	10.990c
Whiting & Co. Inc.	12.65c
Aetna Paper Co.	9.228c

No. 163—40,000 lbs., white, No. 88; flat, cut 21x32½ ins. Min. order 10,000 lbs.

Reese & Reese Inc.	10.86c
Walker, Goulard Plehn	14.32c
R. P. Andrews Paper Co.	15.52c
Mathers-Lamm Paper Co.	14.03c
Barton, Duer & Koch Paper Co.	10.17c
Graham Paper Co.	14.72c
Dobler & Mudge	12.70c
J. W. Butler Paper Co.	10.990c
Whiting & Co. Inc.	12.65c
Aetna Paper Co.	9.328c

No. 164—80,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, Nos. 56, 64, and 72; flat, cut 18½x36, 18½x40¼, 19x24, 21x32, 23x36, and 28x34 ins. Min. order, one substance, one color, 5,000 lbs.

Reese & Reese Inc.	11.11c
Walker, Goulard Plehn	14.82c
Whitaker Paper Co.	12.95c
R. P. Andrews Paper Co.	16.52c
Mathers-Lamm Paper Co.	13.47c
Barton, Duer & Koch Paper Co.	10.73c
Graham Paper Co.	13.60c
J. W. Butler Paper Co.	11.247c
Whiting & Co. Inc.	12.65c
Aetna Paper Co.	9.998c

No. 165—50,000 lbs., blue, buff, cherry, fawn, green, pink, salmon and yellow, No. 88; flat, cut 21x32½ ins. Min. order, one color, 5,000 lbs.

Reese & Reese Inc.	11.11c
Walker, Goulard Plehn	14.82c
Whitaker Paper Co.	12.70c
R. P. Andrews Paper Co.	16.52c
Mathers-Lamm Paper Co.	13.47c
Barton, Duer & Koch Paper Co.	10.63c
Graham Paper Co.	13.60c
J. W. Butler Paper Co.	11.247c
Whiting & Co. Inc.	12.65c
Aetna Paper Co.	9.998c

75 Per Cent Rag Ledger, White and Colored

No. 168—20,000 lbs., white, Nos. 48 and 56; flat, cut 21x32, 24x38, 28x29, and 28x34 ins. Min. order, one substance, 5,000 lbs.

Reese & Reese Inc.	21.75c
Walker, Goulard Plehn	19.83c
R. P. Andrews Paper Co.	19.80c
Mathers-Lamm Paper Co.	19.43c
Barton, Duer & Koch Paper Co.	14.56c
Whiting & Co. Inc.	15.00c
Virginia Paper Co.	14.00c
Mudge Paper Co.	16.35c

No. 169—10,000 lbs., white, No. 64; flat, cut 21x32, 23x36, 24x38, and 28x34 ins. Min. order 5,000 lbs.

Reese & Reese Inc.	21.75c
Walker, Goulard Plehn	19.83c
R. P. Andrews Paper Co.	19.80c
Mathers-Lamm Paper Co.	19.43c
Barton, Duer & Koch Paper Co.	14.56c
Graham Paper Co.	20.42c
Whiting & Co. Inc.	15.00c
Virginia Paper Co.	14.00c
Mudge Paper Co.	16.35c

No. 170—20,000 lbs., white, Nos. 72 and 80; flat, cut 20x28, 21x32, 24x38, and 28x34 ins. Min. order, one substance, 5,000 lbs.

Reese & Reese Inc.	21.75c
Walker, Goulard Plehn	19.83c
R. P. Andrews Paper Co.	19.80c
Mathers-Lamm Paper Co.	19.43c
Barton, Duer & Koch Paper Co.	14.56c
Graham Paper Co.	20.42c
Whiting & Co. Inc.	15.00c
Virginia Paper Co.	14.00c
Mudge Paper Co.	16.35c

No. 171—5,000 lbs., white, No. 88; flat, cut 21x32½ ins. Min. order 5,000 lbs.

Reese & Reese Inc.	21.75c
Walker, Goulard Plehn	19.83c
R. P. Andrews Paper Co.	20.70c
Mathers-Lamm Paper Co.	19.43c
Barton, Duer & Koch Paper Co.	14.56c
Graham Paper Co.	20.42c
Whiting & Co. Inc.	15.00c
Virginia Paper Co.	14.25c
Mudge Paper Co.	16.35c

No. 172—15,000 lbs., blue, buff, cherry, green, pink, salmon and yellow, Nos. 56, 64, and 72; flat, 21x32, 23x36, 24x38, and 28x34 ins. Min. order, one substance, one color, 3,000 lbs.

Walker, Goulard Plehn	20.33c
R. P. Andrews Paper Co.	20.70c
Mathers-Lamm Paper Co.	19.93c
Barton, Duer & Koch Paper Co.	15.42c
Graham Paper Co.	21.37c
Whiting & Co. Inc.	15.25c
Virginia Paper Co.	15.00c
Mudge Paper Co.	17.65c

No. 173—6,000 lbs., blue, buff, cherry, fawn, green, pink, salmon and yellow, No. 88; flat, cut 21x32½ ins. Min. order, one color, 4,000 lbs.

Walker, Goulard Plehn	20.33c
R. P. Andrews Paper Co.	26.10c
Mathers-Lamm Paper Co.	19.93c
Barton, Duer & Koch Paper Co.	15.42c
Virginia Paper Co.	15.25c
Mudge Paper Co.	17.45c

100 Per Cent Rag White Ledger

No. 176—5,000 lbs., No. 48; flat, cut 21x32; 22¼x21½, 23x36, 24x38, and 28x34 ins. Min. order 5,000 lbs.

Walker, Goulard Plehn	25.92c
R. P. Andrews Paper Co.	26.10c
Mathers-Lamm Paper Co.	20.84c
Barton, Duer & Koch Paper Co.	21.83c
Old Dominion Paper Co.	23.699c

No. 177—10,000 lbs., No. 56; flat, cut 20x28, 21x32, 23x36, 24x38, and 28x34 ins. Min. order 5,000 lbs.

Walker, Goulard Plehn	25.92c
R. P. Andrews Paper Co.	26.10c
Mathers-Lamm Paper Co.	20.84c
Barton, Duer & Koch Paper Co.	21.83c
Old Dominion Paper Co.	23.699c

No. 178—15,000 lbs., No. 64; flat, cut 18½x42, 21x32, 23x36, and 28x34 ins. Min. order 5,000 lbs.

Walker, Goulard Plehn	25.92c
R. P. Andrews Paper Co.	26.10c
Mathers-Lamm Paper Co.	20.84c
Barton, Duer & Koch Paper Co.	21.83c
Old Dominion Paper Co.	23.699c

No. 179—10,000 lbs., No. 72; flat, cut 20x28, 21x32, 24x38 and 28x34 ins. Min. order, 5,000 lbs.

Walker, Goulard Plehn	25.92c
R. P. Andrews Paper Co.	26.10c
Mathers-Lamm Paper Co.	20.84c
Barton, Duer & Koch Paper Co.	21.83c
Old Dominion Paper Co.	23.699c

No. 180—10,000 lbs., No. 80; flat, cut

21x32½ and 21x42 ins. Min. order 4,000 lbs.

Walker, Goulard Plehn	25.92c
R. P. Andrews Paper Co.	26.10c
Mathers-Lamm Paper Co.	20.84c
Barton, Duer & Koch Paper Co.	21.83c
Old Dominion Paper Co.	23.699c
Mudge Paper Co.	20.20c

No. 181—15,000 lbs., No. 88; flat, cut 20½x24¾, 21x32½, and 22¾x31½ ins. Min. order, 5,000 lbs.

Walker, Goulard Plehn	25.92c
Mathers-Lamm Paper Co.	20.84c
Barton, Duer & Koch Paper Co.	21.83c
Old Dominion Paper Co.	23.699c
Mudge Paper Co.	20.20c

Sulphite Index, White and Colored

No. 184—250,000 lbs., white, 22½x28½—182 and 230; flat, cut 21x32½, 22½x28½, and 24½x32½ ins., with projecting colored-paper marker between each 100 sheets. Min. order, one weight, 10,000 lbs.

Whitaker Paper Co.	5.91c
Mathers-Lamm Paper Co.	5.86c
Virginia Paper Co.	5.93c
Old Dominion Paper Co.	6.039c
Mudge Paper Co.	6.22c
Paper Corp. of U. S.	6.35c

No. 185—2,000 lbs., white, 22½x28½—280 and 362; flat, cut 21x32½ and 22½x28½ ins., with projecting colored-paper marker between each 100 sheets, Min. order, one weight, 2,000 lbs.

Whitaker Paper Co.	6.50c
Mathers-Lamm Paper Co.	6.16c

No. 186—4,000 lbs., blue, buff, fawn, green, pink, salmon and yellow, 22½x28½—182 and 230; flat, cut 21x32½, and 22½x28½ ins., with projecting colored-paper marker between each 100 sheets. Min. order, one color, one weight, 2,000 lbs.

Mathers-Lamm Paper Co.	6.64c

No. 187—2,000 lbs., blue, buff, fawn, green, pink, salmon and yellow, 22½x28½—280 and 362; flat, cut 21x32½ and 22½x28½ ins., with projecting colored-paper marker between each 100 sheets. Min. order, one color, one weight, 2,000 lbs.

Mathers-Lamm Paper Co.	6.64c

50 Per Cent Rag Index, White and Colored

No. 190—400,000 lbs., white, 22½x28½,—182 and 230; flat, cut 21x32½ and 22½x28½ ins., with projecting colored-papermarker between each 100 sheets. Min. order, one weight, 10,000 lbs.

Marquette Paper Co.	10.00c
Walker, Goulard Plehn	13.38c
R. P. Andrews Paper Co.	14.55c
Mathers-Lamm Paper Co.	13.12c
Barton, Duer & Koch Paper Co.	11.65c
Whiting & Co., Inc.	13.85c
Aetna Paper Co.	8.978c

No. 191—25,000 lbs., white, 22½x28½—280 and 362; flat, cut 21x32½ and 22½x 28½ ins., with projecting colored-paper marker between each 100 sheets. Min. order, one weight, 5,000 lbs.

Walker, Goulard Plehn	13.38c
Mathers-Lamm Paper Co.	13.12c
Barton, Duer & Koch Paper Co.	13.45c
Whiting & Co., Inc.	13.85c

No. 192—150,000 lbs., blue, buff, fawn, green, pink, salmon and yellow, 22½x28½—182 and 230; flat, cut 21x32½ and 22½x28½ ins., with projecting colored-paper marker between each 100 sheets. Min. order, one color, one weight, 5,000 lbs.

Marquette Paper Co.	9.72c
Walker, Goulard Plehn	13.88c
R. P. Andrews Paper Co.	15.55c
Mathers-Lamm Paper Co.	13.12c
Barton, Duer & Koch Paper Co.	9.75c
Graham Paper Co.	14.06c
Whiting & Co., Inc.	13.85c
Aetna Paper Co.	9.278c

No. 193—20,000 lbs., blue, buff, fawn, green, pink, salmon and yellow, 22½x28½—280 and 362; flat, cut 21x32½ and 22½x28½ ins., with projecting colored-paper marker between each 100 sheets. Min. order, one color, one weight, 5,000 lbs.

Walker, Goulard Plehn	13.88c
Mathers-Lamm Paper Co.	13.12c
Barton, Duer & Koch Paper Co.	11.47c
Whiting & Co., Inc.	13.85c

100 Per Cent Rag White Index

No. 196—80,000 lbs., 22½x28½—approximately 206; flat, cut 20½x30½ and 21x32½ ins.

Marquette Paper Co.	22.00c
Reese & Reese, Inc.	25.50c
Walker, Goulard Plehn	23.49c
R. P. Andrews Paper Co.	24.94c
Mathers-Lamm Paper Co.	23.02c
Barton, Duer & Koch Paper Co.	20.35c
Graham Paper Co.	25.00c
Lee Paper Co.	20.73c
Whiting & Co., Inc.	16.81c
Old Dominion Paper Co.	23.449c

White Tissue

No. 197—2,000 lbs., flat, 21x32—18. Min. order 1,000 lbs.

R. P. Andrews Paper Co.	11.00c
Mathers-Lamm Paper Co.	10.51c

Facing Stereo Tissue

No. 198—500 lbs., 19x24—9; rolls 24 ins. wide (3-inch iron cores). Min. order 500 lbs.

No bid.

Coated Cover, White and Colored

No. 201—10,000 lbs., white, 20x26—130 and 160; flat, 26½x41 ins., the grain to run lengthwise of the sheet. Min. order, 5,000 lbs.

John F. Post, Inc.	6.69c
Whitaker Paper Co.	7.02c
R. P. Andrews Paper Co.	7.06c
Enterprise Paper Co.	6.92c
Dobler & Mudge	6.92c
Stanford Paper Co.	7.02c

No. 202—40,000 lbs., India tint, light green, light gray, and primrose, 20x26—100; flat, 26½x41 ins.

John F. Post, Inc.	7.66c
Whitaker Paper Co.	8.00c
R. P. Andrews Paper Co.	8.04c
Enterprise Paper Co.	7.82c
Dobler & Mudge	7.89c

25 Per Cent Rag Machine-Finish Cover, Colored

No. 203—50,000 lbs., dawn, quaker drab, robin's egg, terra cotta, light blue, dark blue, buff, gold, cream, light gray, dark gray, light brown, dark brown, light green, dark green, and coral red; flat, 20x25—96, in wrapped bundles with projecting colored-paper marker between each 500 sheets. Min. order, one color, 2,500 lbs.

Whitaker Paper Co.	10.76c
R. P. Andrews Paper Co.	9.99c
Stanford Paper Co.	9.94c

No. 204—80,000 lbs., blue, brown, granite, green, pink, tea and yellow, 20x26—100; flat, cut 20x24 and 33x46 ins., in wrapped bundles, with projecting colored-paper marker between each 500 sheets. Min. order, one color, 5,000 lbs.

Whitaker Paper Co.	10.76c
R. P. Andrews Paper Co.	9.99c
Graham Paper Co.	8.94c
Lee Paper Co.	9.36c
Stanford Paper Co.	8.74c

50 Per Cent Rag Laid Cover, Colored

No. 205—60,000 lbs., (manufacturer's stock shades as selected), blue, buff, cream, white, gray, green and terra cotta, 20x26—130; flat, cut 20x25, 22x33 and 26½x41 ins., in wrapped bundles, with projecting colored-paper market between each 500 sheets. Min. order, one color, 2,000 lbs.

R. P. Andrews Paper Co.	12.24c
Lee Paper Co.	12.45c

Wood Manila

No. 209—150,000 lbs., 24x36—80 to 120; flat, cut 21x32, 22½x34½, and 25x38 ins., in wrapped bundles with projecting colored-paper marker between each 500 sheets.

Barton, Duer & Koch Paper Co.	3.93c
Paper Corp. of U. S.	4.00c

No. 210—200,000 lbs., 24x36—80 to 120; rolls, 18 and 21 ins. wide (3-inch iron cores).

Barton, Duer & Koch Paper Co.	3.68c
Paper Corp. of U. S.	3.75c

Sulphite Manila

No. 211—35,000 lbs., 24x36—100 to 160; flat, cut any size in wrapped bundles. Min. order, one weight, 5,000 lbs.

Barton, Duer & Koch Paper Co.	5.08c
Mudge Paper Co.	5.40c
Paper Corp. of U. S.	5.25c

Rope Manila

No. 213—15,000 lbs., 24x36—120, 140, and 160; rolls, 18 and 48 ins. wide (3-inch iron cores). Min. order 5,000 lbs.

No bid.

No. 214—20,000 lbs., 24x36—280; rolls, 48 ins. wide (3-inch iron cores). Min. order 5,000 lbs.

No bid.

Drumhead Manila

No. 215—20,000 lbs., 24x36—280; flat, cut 26x42 ins. Min. order 5,000 lbs.

No bid.

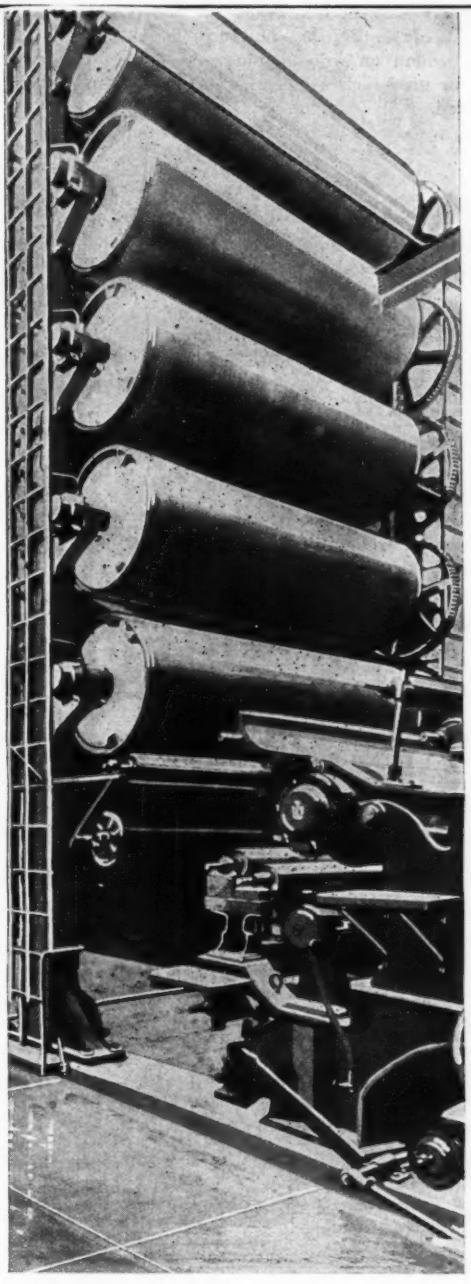
No. 2 Kraft

No. 217—200,000 lbs., 24x36—80 to 160; flat, cut any size in wrapped bundles.

R. P. Andrews Paper Co.	4.41c
Barton, Duer & Koch Paper Co.	4.245c

No. 218—200,000 lbs., 24x36—80 to 160; cut any size, folded (25 sheets per fold), in wrapped bundles.

R. P. Andrews Paper Co.	4.41c
Barton, Duer & Koch Paper Co.	4.245c



Be not the last to lay the old aside!

● **How about a new car without a self starter? Interested? Not much!!!**

● **Why then be last to lay the old double and triple deck dryers aside when the B-C vertical section is, and for ten years has been, standard equipment just as much as the self starter?**

● **Yes, we're talking to mills successfully running lighter papers as well as to makers of board and container. There are today enough mills running lighter papers on verticals to close the doors to debate on that score.**

● **Why verticals? Faster drying, more uniform drying, floor space economy, to list just three points.**

THE BLACK-CLAWSON COMPANY
HAMILTON, OHIO
Owners of
Shartle Brothers Machine Co.,
Middletown, Ohio

BLACK-CLAWSON

No. 219—350,000 lbs., 24x36—80 to 160; rolls, 9, 11½, 24, 36, 39, and 48 ins. wide, wound on wooden plugs, 1½-inch hole, or on 3-inch iron cores as may be specified.

R. P. Andrews Paper Co.	4.16c
Barton, Duer & Koch Paper Co.	3.995c

No. 1 Kraft

No. 220—6,000 lbs., 24x36—120 and 160; flat, cut any size in wrapped bundles.

R. P. Andrews Paper Co.	2.51c

White Paraffin

No. 251—1,000 lbs., flat, 24x38—32. Min. order 1,000 lbs.

Shawmut Wax Paper Co.	10.45c
R. P. Andrews Paper Co.	9.65c
Mathers-Lamm Paper Co.	9.90c
Enterprise Paper Co.	9.74c
J. R. Howarth Paper Co.	9.45c
Old Dominion Paper Co.	9.89c

White Gummed

No. 252—400,000 sheets, flat, 17x22—40, exclusive of weight of gum used. Min. order 50,000 sheets.

L. Hyman & Sons	$5.50	per M sheets
R. P. Andrews Paper Co.	5.37	per M sheets
Mathers-Lamm Paper Co.	5.82	per M sheets
Graham Paper Co.	5.70	per M sheets
J. R. Howarth Paper Co.	5.34	per M sheets
Virginia Paper Co.	5.88	per M sheets
Old Dominion Paper Co.	5.269	per M sheets
Stanford Paper Co.	6.00	per M sheets

Blotting, White and Colored

No. 254—10,000 lbs., white, flat, 19x24—160, in wrapped bundles. Min. order 4,000 lbs.

L. Hyman & Sons	5.49c
R. P. Andrews Paper Co.	5.62c
Walker, Goulard Plehn	6.75c
Barton, Duer & Koch Paper Co.	5.60c
Enterprise Paper Co.	6.74c
J. R. Howarth Paper Co.	6.50c
Old Dominion Paper Co.	5.639c
Stanford Paper Co.	6.75c

No. 255—2,000 lbs. (manufacturer's stock shade), buff and salmon, flat, 19x24—160, in wrapped bundles. Min. order 2,000 lbs.

L. Hyman & Sons	5.49c
Walker, Goulard Plehn	6.75c
R. P. Andrews Paper Co.	6.00c
Barton, Duer & Koch Paper Co.	5.64c
Graham Paper Co.	5.49c
Enterprise Paper Co.	6.74c
Old Dominion Paper Co.	5.639c
Stanford Paper Co.	6.75c

25 Per Cent Rag Blotting, White and Colored

No. 256—25,000 lbs., white, flat, 19x24—160, in wrapped bundles. Min. order 10,000 lbs.

Walker, Goulard Plehn	8.90c
R. P. Andrews Paper Co.	6.89c
Barton, Duer & Koch Paper Co.	6.82c
Graham Paper Co.	7.49c
Enterprise Paper Co.	8.80c
Dobler & Mudge	7.03c
Old Dominion Paper Co.	6.849c
Stanford Paper Co.	8.90c

No. 257—10,000 lbs. (manufacturer's stock shade), buff and salmon, flat, 19x24—160, in wrapped bundles. Min. order one color, 2,000 lbs.

L. Hyman & Sons	7.49c
Walker, Goulard Plehn	8.90c
R. P. Andrews Paper Co.	7.15c
Barton, Duer & Koch Paper Co.	6.93c
Graham Paper Co.	7.49c
Enterprise Paper Co.	8.80c
Old Dominion Paper Co.	6.987c
Stanford Paper Co.	8.90c

Desk Blotting, Colored

No. 258—12,000 lbs. (manufacturer's stock shade), blue and buff, flat, 19x24—200, in wrapped bundles. Min. order, one color, 5,000 lbs.

L. Hyman & Sons	5.49c
Walker, Goulard Plehn	6.25c
R. P. Andrews Paper Co.	5.77c
Barton, Duer & Koch Paper Co.	5.68c
Enterprise Paper Co.	6.24c
J. R. Howarth Paper Co.	6.50c
Dobler & Mudge	6.84c
Old Dominion Paper Co.	5.717c
Stanford Paper Co.	6.25c

No. 259 — 120,000 lbs., moss-green (manufacturer's stock shade), flat, 19x24—200, in wrapped bundles. Min. order 10,000 lbs.

L. Hyman & Sons	5.82c
Walker, Goulard Plehn	6.05c
R. P. Andrews Paper Co.	5.50c
Barton, Duer & Koch Paper Co.	5.63c
Enterprise Paper Co.	5.99c
J. R. Howarth Paper Co.	6.24c
Dobler & Mudge	6.74c
Old Dominion Paper Co.	5.674c
Stanford Paper Co.	6.05c
Graham Paper Co.	5.82c

White Stereotype Molding

No. 260—1,500 lbs., 19x24—120; rolls, 24 ins. wide (3-inch iron cores). Min. order 1,000 lbs.

No bid.

Red Stereotype Molding

No. 261—1,000 lbs., 19x24—40; rolls, 24 ins. wide (3-inch iron cores). Min. order 1,000 lbs.

No bid.

Oiled Manila Tympan

No. 262—20,000 lbs., 24x36—approximately 200; rolls, 38 and 48 ins. wide; 10-inch diameter; wound on wooden plugs, 1½-inch hole. Min. order 5,000 lbs.

Cromwell Paper Co.	7.75c
Link Paper Co.	6.87c
Mathers-Lamm Paper Co.	5.89c
Barton, Duer & Koch Paper Co.	6.49c
Mudge Paper Co.	7.45c

Plate-Wiping, for Embossing Presses

No. 263—2,000 lbs., 24x36—100; rolls, 24 ins. wide (3-inch iron cores). Min. order 1,000 lbs.

Barton, Duer & Koch Paper Co.	6.00c

Back-Lining, for Case-Making Machines

No. 264—2,000 lbs., 24x36—180; rolls, 24 ins. diameter, 37 ins. wide (3-inch iron cores). Min. order 2,000 lbs.

R. P. Andrews Paper Co.	3.54c
Mathers-Lamm Paper Co.	3.43c

High-Finish Red Sulphite

No. 265—10,000 lbs., flat, 24x36—320 and 400, in wrapped bundles. Min. order 5,000 lbs.

R. P. Andrews Paper Co.	6.13c
Virginia Paper Co.	6.08c

High-Finish Sulphite Manila Tag

No. 271—100,000 lbs., 24x36—160 to 280; flat, cut any size, min. width 24 ins., max. width 38 ins., in wrapped bundles.

Whitaker Paper Co.	4.98c
R. P. Andrews Paper Co.	6.00c 6.50c
Barton, Duer & Koch Paper Co.	5.35c
Virginia Paper Co.	6.43c 5.93c
Mudge Paper Co.	6.17c

Calendered Tag, Manila and Colored

No. 276—800,000 lbs., manila, 22½x28½—approximately 148; rolls, 23¼ and 26½ ins. wide (6-inch iron cores).

Barton, Duer & Koch Paper Co.	7.00c

No. 277—60,000 lbs., blue, brown, green, pink, red, salmon and yellow, 22½x28½—approximately 148; rolls, 23¼ and 26½ ins. wide (6-inch iron cores). Min. order, one color, 10,000 lbs.

Barton, Duer & Koch Paper Co.	7.75c

Jute Tag

No. 280—40,000 lbs., 22½x28½—200 and 280; flat, cut 22½x28½ ins., in wrapped bundles. Min. order, one weight, 10,000 lbs.

No bid.

Manila Board

No. 281—20,000 lbs., 22½x28½—400; flat, cut 17x28, 21x32, and 22½x28½ ins., in wrapped bundles with projecting colored-paper marker between each 100 sheets. Min. order 10,000 lbs.

No bid.

Railroad Board, White and Colored

No. 302—20,000 sheets, white, flat, 22x28 ins., 4-ply, each 100 sheets fully banded, packed in wooden cases. Min. order 10,000 sheets.

L. Hyman & Sons	$21.34 per M sheets
Whitaker Paper Co.	21.34 per M sheets
Barton, Duer & Koch Paper Co.	22.00 per M sheets
Virginia Paper Co.	21.11 per M sheets
Old Dominion Paper Co.	21.29 per M sheets

No. 303—10,000 sheets, white, flat, 22x28 in., 8-ply, each 100 sheets fully banded, packed in wooden cases. Min. order 5,000 sheets.

L. Hyman & Sons	$29.10 per M sheets
Whitaker Paper Co.	29.10 per M sheets
Barton, Duer & Koch Paper Co.	30.00 per M sheets
Virginia Paper Co.	28.79 per M sheets
Old Dominion Paper Co.	28.99 per M sheets

No. 304—20,000 sheets, white, flat, 22x28 ins., 14-ply, each 50 sheets fully banded, packed in wooden cases. Min. order 5,000 sheets.

L. Hyman & Sons	$44.13 per M sheets
Whitaker Paper Co.	44.13 per M sheets
Barton, Duer & Koch Paper Co.	43.25 per M sheets
Virginia Paper Co.	43.66 per M sheets
Old Dominion Paper Co.	43.99 per M sheets

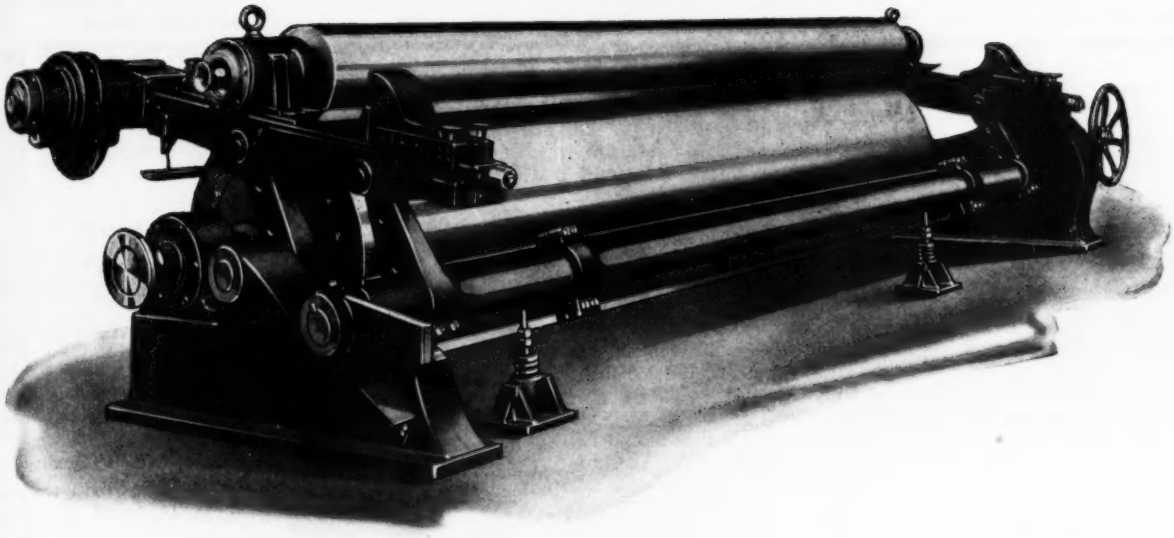
No. 305—50,000 sheets, ash gray, blue, buff, green, lemon and orange, flat, 22x28 ins., 4-ply, each 100 sheets fully banded, packed in wooden cases. Min. order, one color, 5,000 sheets.

L. Hyman & Sons	$25.22 per M sheets
Whitaker Paper Co.	25.22 per M sheets
Barton, Duer & Koch Paper Co.	26.00 per M sheets
Virginia Paper Co.	24.96 per M sheets
Old Dominion Paper Co.	25.14 per M sheets

Wood Bristol, Colored

No. 306—50,000 lbs., buff, 22½x28½—160; rolls 22 ins. wide (6-inch iron cores).

Barton, Duer & Koch Paper Co.	4.65c
J. W. Butler Paper Co.	4.85c
Old Dominion Paper Co.	4.838c
Paper Corp. of U. S.	5.00c



A MODERN AUTOMATIC DRUM REEL

• THE DESIGN OF THE modern BAGLEY & SEWALL Automatic Reel provides for the maximum efficiency in handling paper from the lightest to the heaviest weights suitable for this type of reel. Originally designed for handling light weight tissues at speeds from 800 to 900 feet per minute, for which condition it proved highly satisfactory, it is also giving very satisfactory results on medium to heavier weights. Without exception, all operators using this reel are enthusiastic about its operation, maintaining that it is the most convenient reel that they have ever handled. Each empty reel drum is held in bearings located nearest the calendar stack and as the roll builds up the supporting bearings automatically move away from the original position, so that the next empty drum may be placed in the initial starting place.

EASE of passing the sheet to the empty reel drum.

UNIFORMITY and trueness of running reel drum.

UNIFORMITY of tension throughout the winding action.

CONTROL of the degree of tension.

CONVENIENT means for placing empty reel drum in readiness for changing the sheet from the completed roll to the empty drum.

INSTANTANEOUS shift of the sheet from the completed roll to the empty drum, with no loss of paper, and with smooth winding from the start.

EASY removal of the finished roll, without interference with the starting roll.

EFFECTIVE and dependable spreader.

NICELY balanced, hand operated doctor.

THE reel occupies much less floor space than other forms of uniform speed reels.

THIS reel is now being used in a number of installations, including both narrow and wide machines and on papers running in weights from 8½ pound tissue to heavy book, at speeds limited only by the maximum speeds of the paper machines.

THE BAGLEY & SEWALL CO. - WATERTOWN, N. Y.

No. 307—80,000 lbs., blue, buff, gray, green, melon, pink, quaker-drab, and yellow, flat, 21x31—204; in wrapped bundles with projecting colored-paper marker between each 100 sheets.

Barton, Duer & Koch Paper Co.	4.65c
J. W. Butler Paper Co.	4.85c
Old Dominion Paper Co.	4.838c
Paper Corp. of U. S.	5.00c

No. 308—100,000 lbs., blue, brown, buff, gray, green, melon, pink and yellow, 22½x28½—200; rolls 20 ins. wide (6-inch iron cores).

Barton, Duer & Koch Paper Co.	4.65c
J. W. Butler Paper Co.	4.85c
Old Dominion Paper Co.	4.838c
Paper Corp. of U. S.	5.00c

No. 309—100,000 lbs., blue, brown, buff, gray, green, melon, pink and yellow, 22½x28½—200; rolls 20 ins. wide (6-inch iron cores).

Barton, Duer & Koch Paper Co.	4.65c
J. W. Butler Paper Co.	4.85c
Old Dominion Paper Co.	4.838c
Paper Corp. of U. S.	5.00c

No. 310—20,000 lbs., buff, 22½x28½—200; flat, cut 12x18 and 14½x17½ ins., the grain to run lengthwise of the sheet, in wrapped bundles with projecting colored-paper marker between each 100 sheets.

Barton, Duer & Koch Paper Co.	4.65c
J. W. Butler Paper Co.	4.85c
Old Dominion Paper Co.	4.838c
Paper Corp. of U. S.	5.00c

United States Postal Card Bristol

No. 325—6,000,000 lbs., 22½x28½—188; rolls 33 ins. wide and 34 ins. in diameter (6-inch iron cores).

Whitaker Paper Co.	4.65c
R. P. Andrews Paper Co.	4.65c

Pressboard, Colored

No. 351—20,000 sheets, red, flat, 24x32 ins., thickness .0140 inch. Min. order 5,000 sheets.

Walker, Goulard Plehn	6.65 per M sheets
Whitaker Paper Co.	6.65 per M sheets
Mathers-Lamm Paper Co.	6.32 per M sheets
Barton, Duer & Koch Paper Co.	6.16 per M sheets

No. 352—10,000 sheets, gray, flat, 30x36 ins., thickness .0300 inch. Min. order 5,000 sheets.

Walker, Goulard Plehn	19.76 per 100 sheets
Whitaker Paper Co.	19.76 per 100 sheets
Barton, Duer & Koch Paper Co.	18.03 per 100 sheets

News Board

No. 360—4,000 lbs., flat, 26x38 ins., No. 100 (to be trimmed square on four sides). Min. order, 1,000 lbs.

Whitaker Paper Co.	2.23c
R. P. Andrews Paper Co.	2.25c
Mathers-Lamm Paper Co.	2.23c
Barton, Duer & Koch Paper Co.	2.25c
Enterprise Paper Co.	2.249c
Dobler & Mudge	2.23c
Virginia Paper Co.	2.159c
Old Dominion Paper Co.	2.239c

Chip Board

No. 361—1,000,000 lbs., 26x38 ins., No. 50, flat, cut 21½x32½, 24½x38, 26x38, 28½x34½, and 32½x42½ ins.

Cauthorne Paper Co.	2.122c
Walker, Goulard Plehn	1.965c
Whitaker Paper Co.	1.91c
R. P. Andrews Paper Co.	1.97c
Mathers-Lamm Paper Co.	2.0187c
Barton, Duer & Koch Paper Co.	1.90c
Enterprise Paper Co.	1.90c
Dobler & Mudge	1.919c
Container Corp. of America	1.875c
Virginia Paper Co.	1.919c
Old Dominion Paper Co.	1.9348c
Stanford Paper Co.	2.00c

Marble Grained Lined Board

No. 362—15,000 lbs., 26x38 ins., No. 50; flat, cut 22x32 ins.

Mathers-Lamm Paper Co.	4.028c

Strawboard

No. 363—5,000 lbs., flat, 26x38 ins., No. 50.

No bid.

Lined Chip Board

No. 364—5,000 lbs., flat, 26x38 ins., No. 50.

Whitaker Paper Co.	2.47c
R. P. Andrews Paper Co.	2.50c
Mathers-Lamm Paper Co.	2.48c
Barton, Duer & Koch Paper Co.	2.50c
Enterprise Paper Co.	2.49c
Dobler & Mudge	2.46c
Virginia Paper Co.	2.50c
Old Dominion Paper Co.	2.489c

Lined Box Board

No. 365—36,000 lbs., 26x38 ins., No. 40; flat, cut 24½x34 ins. Min. order 36,000 lbs.

Whitaker Paper Co.	2.42c
R. P. Andrews Paper Co.	2.50c
Mathers-Lamm Paper Co.	2.42c
Barton, Duer & Kohn Paper Co.	2.39c
Enterprise Paper Co.	2.425c
Dobler & Mudge	2.41c
Virginia Paper Co.	2.399c
Old Dominion Paper Co.	2.42c

Binder's Board, No. 1 Quality

No. 366—300,000 lbs., flat, to trim 25x30 ins., Nos. 16, 18, 20, 25, 30 and 40.

Geo. W. Millar & Co.	3.0375c
Whitaker Paper Co.	3.50c
R. P. Andrews Paper Co.	3.3075c
Mathers-Lamm Paper Co.	3.35c
Barton, Duer & Koch Paper Co.	3.30c
Graham Paper Co.	3.3075c
National Pulp & Paper Co.	3.3075c
Dobler & Mudge	3.3075c

No. 367—50,000 lbs., 25¾x30¾ ins., Nos. 12 and 20; flat, to trim 34x44 ins.

Geo. W. Millar & Co.	3.0375c
Whitaker Paper Co.	3.50c
R. P. Andrews Paper Co.	3.3075c
Mathers-Lamm Paper Co.	3.35c
Barton, Duer & Koch Paper Co.	3.30c
Graham Paper Co.	3.3075c
National Pulp & Paper Co.	3.3075c
Dobler & Mudge	3.3075c

Binder's Board, Best Quality

No. 368—40,000 lbs., flat, to trim 20x30 ins., and 22x28 ins., Nos. 18, 20, 25, 30, 35, 40 and 45.

Geo. W. Millar & Co.	4.60c
R. P. Andrews Paper Co.	4.60c
Barton, Duer & Koch Paper Co.	4.60c
Graham Paper Co.	4.60c
National Pulp & Paper Co.	4.60c

A. T. Barnett Goes With Merrimac Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., November 24, 1936—Andrew T. Barnett who has been assistant to Leon M. Yoerg, vice-president of the American Writing Paper Company Inc., has taken the position of superintendent of the Merrimac Paper Company at Lawrence. He left today to assume his new duties. He entered the employ of the American Company in 1921 coming here from the Strathmore Paper Company in Woronoco where he was superintendent for eight years. He was superintendent of the Albion Division of the American Company until it closed in 1930 and had been superintendent of the Waukegan Division and the South Manchester, Conn., plant.

Lease Southern Paper Board Mills

ROANOKE RAPIDS, N. C., Novmber 23, 1936—The Manchester Board and Paper Company, of Richmond, Va., is starting up on a lease basis, with option to purchase, the plant here of the Southern Paper Board Mills, Inc., which had been bought at a sale by the Virginia Electric and Power Company. The equipment, it is understood, will remain the same for the present.

Eagle Lodge Adds To Requests

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., November 24, 1936—Eagle Lodge Papermakers, the local union organization of paper mill employees Sunday voted to add to their request of the paper manufacturers in Holyoke Mittineague and Woronoco for an increase in wages, that the paper mills shut down on every legal holiday and also that this shutdown begin at 11 P. M. the day before so as to give a shutdown totaling 36 hours. Union heads will meet soon to formulate the advance in percentage that they desire. Up to the present time their request did not specify the advance and asked for a conference.

Correction

A news item from Holyoke, Mass., which appeared on page 16 of the November 5 issue of the PAPER TRADE JOURNAL, entitled "Marvellum Reduces Prices," was incorrect.

The Marvellum Company states that prices have been advanced rather than reduced. In revising the Rayon Mica Coated Paper prices, the company employed a somewhat different pricing method and the prices were made f.o.b. mill rather than delivered.

Exclusively "Dilts"

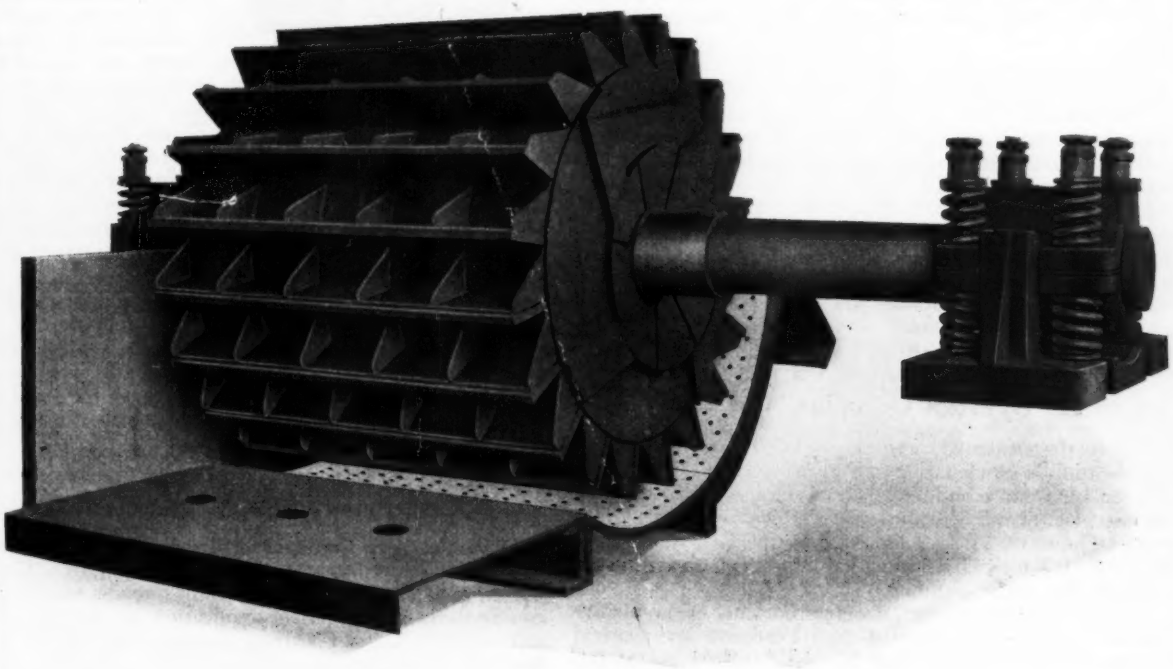
When you buy a *Dilts* Breaker Beater here are a few exclusive features you obtain as standard equipment.

Each fly bar can be removed without disturbing others.

The famous Dilts keyed handless roll. Four cast steel heads—forged steel spindle.

Bearings and bases heavy cast steel construction throughout.

Double spring suspension bearings cushion shock in both upward and downward directions. Marine thrust if desired.



Patented Braced Bar construction, reinforcing each fly bar—transmitting shock to base of next adjacent bar.

Maximum extracting capacity — using both the perforated bedplate and perforated backfall.

Eccentric Banger Discs and hardened alloy bangers prevent rags reaching the spindle.

Tubside and midfeather one inch thick—heavily ribbed and lined with boiler plates for renewability.

and there are other outstanding designed features we would like to tell you about. Write us.

—Dilts—

MACHINE WORKS Inc. FULTON, N.Y.

"Your paper is made in your beaters"

M. M. Elish & Co. Get Merit Certificate

An interesting sidelight on the American Institute of Graphic Arts Annual Exhibition of Commercial Printing of the year recently displayed at the Architectural League, 115 East 40th street, New York City, reveals that while quite a number of paper manufacturers' printed pieces were judged worthy of being awarded a certificate of merit, only one paper merchant's printed matter was judged worthy of this honor. M. M. Elish & Co. Inc., 29 Beekman street, New York City, was so honored with their piece 'This Platinum Takes Ink" recently mailed to the printing trade of New York City.

The piece chosen is the first of a six piece mailing campaign designed to help the printer create new profitable gummed and ungummed label orders for himself. It gives a simple original design bearing a fictitious name printed right on the stock which might be sold as is, and is printed on M. M. Elish & Co's Defiance Regal Platinum Label Paper.

The suggested label contains no artwork and is designed for type and rules only.

The piece is 8½ x 11 and is printed with a dark blue ink. In addition, this piece contains a gold and platinum test sheet illustrating the easy printing qualities of this metallic coating, headed "Run Me Through the Press." And for a stiffener a brilliant coated Railroad Board, headed "Hang Me Up," containing a live list of prospective label users of all kinds is enclosed. These four units are enclosed in a portfolio printed in red and black headed "Today's Paper Suggestions," on Fawn Detroit Embossed Cover. The portfolio itself is designed in the form of a file folder, to fit the printers' stock size filing cabinets.

General Dyestuff Occupies New Building

Every departmental activity of the General Dyestuff Corporation is now coordinated under one roof in a newly erected nine story building located at 435 Hudson street between Leroy and Morton streets. New York City. With the exception of ½ floor tenanted by the General Aniline Works, for which GDC is sole selling agent, the company occupies the entire building.

Modern in every respect, it offers not only every facility for the efficient operation of their executive and general offices but also ample space for their main laboratories, shipping and warehouse rooms.

General Dyestuff Corporation's activities are thus centralized and modernized to meet the increasing demands of industry for complete service and a comprehensive line of dyestuffs for paper and various other products requiring colors or allied materials.

R. Preston Goes with American Tissue Mills

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., November 24, 1936—Notice was given today by the American Tissue Mills, Inc., that Robert Preston of South Hadley Falls, had been re-engaged as salesman for that company. Mr. Preston had been a salesman for the company a number of years, but resigned two years ago.

General Carton Corp. Reorganization

Samuel Alman, treasurer of the General Carton Corporation, 145 Thorndike street, Lowell, Mass., which is now inactive, has stated that efforts are being made to reorganize the business. This company started business in the plant of the former C. F. Hatch Company.

New Giant Grip Welder

To meet the demand for a low priced practical A. C. welder, Giant Grip Manufacturing Company, of Oshkosh, Wisconsin, announces a new welder, known as "Giant Grip Junior," in four models from 90 amperes to 300 amperes capacity, illustrated here, to supplement their line of standard welders that are now being sold under their trade name "Giant Grip."

The new welders are lighter in weight than the standard welders due to the wood construction of the cabinets and the arrangement of the amperage control, there being only ten controls in the two models and 16 controls in the other two, while the standard welders have 27 and 36 controls. With the same safety factor as the standard models, these new welders are specially designed transformer type but without reactance control, static high frequency arc or sheet metal attachment. They have the same insulation thickness and the same temperature rise as the standard models, and are as safe and easy to operate.

Each is equipped with rotating knife switch control with amperage distinctly marked indicating each step in welding. They are not auto transformer type welders and can be used on grounded systems and for water pipe thawing.

The manufacturer states that they carry the same guarantee of performance and high quality workmanship as their standard welders.

Splash-Proof Motor Patent Allowed

The Louis Allis Company, Milwaukee, reports that they have recently had issued to them Patent No. 2,055,931, covering the many important claims made several years ago by them in their patent application on this type motor.

The Louis Allis Company believes the patent covers features providing the only complete protection against splashing liquids.

The Splash-Proof type motor is designed especially for use in dairies, breweries, packing plants, tanneries, paper mills, and all chemical and process plants, food plants, etc., where the motor is subject to splashing or dripping liquids, or where, for sanitary reasons, the equipment has to be washed down at regular intervals.

This comparatively new type motor has also been widely adopted in numerous industries for outdoor applications—as an all-weather motor suitable to exposure to rain, snow, hail, sleet and other hazards of the elements.

In the few years that splash-proof motors have been on the market, they have become one of the most popular types of industrial motors.

Thwaite Goes To Seminole

Herbert Thwaite has been appointed general sales manager of the Seminole Paper Corporation, to succeed H. B. Weil, former vice-president and general manager. Mr. Thwaite has had many years of experience in toilet paper merchandising.

New Literature

The Brown Instrument Company, Philadelphia, Pa., has just published a Handbook on Flow Meter Engineering. It covers every phase of flow meter engineering—principles, designs, applications and installation—and the data covers all types of fluid measuring equipment using the orifice. All theory is illustrated with charts, photographs and sample problems, just like those encountered every day by power and processing engineers. The Brown Flow Meter Engineering Handbook is a handsome volume of 164 pages, printed on highly coated paper and durably bound with Spanish grain leather. The price is $2.00 a copy.

A new eight-page bulletin illustrating and describing the improved Mixflo centrifugal pump has been issued by the Worthington Pump and Machinery Corporation, Harrison, N. J. Photographs, sectional drawings and dimensions tables are included in the bulletin. It contains a complete description of the parts of the pumps, together with technical information concerning modern trends in hydraulic. A copy of the bulletin, W-313-B1, may be obtained by request to the manufacturer.

Roots-Connersville Blower Corporation, of Connersville, Ind., has just issued Bulletin 260-B11B descriptive of its line of Type "T" turbine pumps, which have been on the market several years, and while the basic operating principle remains the same, numerous refinements have been included to provide for increased durability and improved performance.

The Leeds & Northrup Company, 4904 Stenton avenue, Philadelphia, Pa., has just issued an illustrated folder describing the company's instruments which indicate, record, signal and control. This folder describes how power plants use Micromax instruments and how worthwhile economies in power plant operations may be effected.

The new Black-Clawson vat is concisely described in an attractive folder just issued by the Black-Clawson Company, of Hamilton, Ohio. The manufacturers claim that this new vat will give the paper maker a better formed sheet of paper, better crossing, better surface and faster operating speeds.

Greene, Tweed & Co., 109 Duane street, New York, have just issued a new series of folders describing the various products which the company manufactures, including "Palmetto," a modern packing for present-day conditions; the "Basa" Hammer and the "Favorite" Reversible Ratchet Wrench. The company has also issued a clever cardboard reproduction of the "Basa" Hammer, showing the weights and measurements of the different surfaces in which it is made.

Useful information on aqua and anhydrous ammonia with particular reference to effective handling, first aid and pertinent data, is provided in the latest bulletin just issued by the Pennsylvania Salt Manufacturing Company, 1000 Widener Building, Philadelphia, Pa. This instructive bulletin contains many diagrams and charts.

The Brown Instrument Company has just published a new Broadside entitled: "Here's the Answer to Your Temperature Problem," featuring Brown Thermometer Controllers. This new broadside graphically describes the accuracy, simplicity and ruggedness of Brown Thermometer Controllers. It illustrates the ease with which Brown Air-o-Line Thermometer Controllers may be "tuned" to specific process requirements and in addition gives in detail the other features and the ranges of both air operated and electric types of controllers. The new broadside also presents a complete description of Con-Tac-Tor Mercury Switches. A copy of this broadside will be sent upon request. Address: The Brown Instrument Company, a division of Minneapolis-Honeywell Regulator Company, Wayne and Roberts Avenues, Philadelphia, Pa.

New Variable Speed Control Booklet

"Speed Control at Work" is the apt title of a new booklet which has just been issued by Reeves Pulley Company. This booklet is a brief inspection, both by word and illustration, of the methods employed by twelve nationally-known manufacturers in securing complete speed adjustability of production machines in their plants. In addition, it illustrates and describes here the three basic units in the complete line of Reeves Speed Control equipment and a number of the different designs and controls available in this line.

Readers may obtain copies free and without obligation, by writing to Reeves Pulley Company, Columbus, Indiana, or to any of its 30-odd representatives throughout the United States and Canada.

New Manhattan Top Press Roll

The latest contribution of the Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., to better paper-making is their new "Rub-Roc" Top Press Roll. It is recommended as ideal for top press and smoothing press service. The "Rub-Roc" Roll is made of a specially prepared rubber compound which has eliminated the tendency to adhere to the sheet. Because of this repellant quality, the sheet is instantly released. Other advantages are that felt wear is decreased and crushing of the sheet is avoided. The manufacturer guarantees this new roll not to "pick-up" or crack in service. In appearance the new "Rub-Roc" Roll is distinctive with a mottled red and black surface. Extensive laboratory tests and field trials on various grades and weights of paper have been made, and as a result "Rub-Roc" rolls are now officially announced to the paper industry as an improved and more efficient Top Press Roll. Further information on "Rub-Roc" Rolls may be obtained from the Roll Department of the manufacturer at Passaic, N. J.

Graham Transmissions

The Graham variable speed transmission, manufactured by the Fellows Gear Shaper Company for Graham Transmissions, Springfield, Vt., is described in detail in an illustrated brochure just issued. The Graham variable speed transmission is said to convert any squirrel-cage motor into a compact, high-torque power unit of infinite speed range.

PAPER TRADE JOURNAL

ESTABLISHED 1872

Reg. U. S. Pat. Off.

15 West 47th St., New York, N. Y.

Henry J. Berger
Editor

Ronald G. Macdonald
Editor Technical Section

Herbert J. Laughton
Associate Editor

Thomas J. Burke, C. A.
Editor Cost Section

Lynne M. Lamm
Washington Correspondent

Price, Per Copy, 10 Cents

United States, Per Annum, $4.00
Canada and Foreign Countries in Postal Union, $6.00

Member Audit Bureau of Circulations

Vol. CII New York, November 26, 1936 No. 22

FUTURE MEETINGS

NEW ENGLAND SECTION, Technical Association of the Pulp and Paper Industry—Third Friday of each month at the Nonotuck Hotel, Holyoke, Mass.

DELAWARE VALLEY SECTION, Technical Association of the Pulp and Paper Industry—Fourth Friday of each month at the Engineers Club, Philadelphia, Pa.

LAKE STATES SECTION, Technical Association of the Pulp and Paper Industry—Second Tuesday of each month at the Conway, Hotel, Appleton, Wis.

KALAMAZOO VALLEY SECTION, Technical Association of the Pulp and Paper Industry—First Thursday of each month at the Park-American Hotel, Kalamazoo, Mich.

BUSINESS CARRIES ON

The momentum which has been gained in business activities is impressive, according to the *Washington Review* which is issued by the Chamber of Commerce of the United States. This applies both to its present extent and its promise for the period ahead. When all the evidence is brought together in an endeavor to consider the sum total of economic activity throughout the country, it appears unmistakably that since the summer of 1935 there has been steady progress.

Such a prolonged advance, although gradual from month to month, might suggest at least a temporary recession in the near future. But consideration of the elements which enter into national activity, both by business fields and by areas, makes it clear that during the last seventeen months the most significant development has been improvement in balance, among fields of enterprise and among the areas of the country. This has not been a period of spectacular bursts here and there serving to accentuate comparisons with low conditions elsewhere. Instead, it can now be seen that there have been at work the processes which restore order where dislocation had earlier been evident, which bring all activities nearer the average instead of some being far above and others equally far below. It is necessary to go back a decade to find another period in which business momentum had within itself equal elements of strength.

When production is checked back, it is found that in May, 1935, the ratio of production of capital goods to production of consumers' goods was 53.5 to 86. This ratio has now become approximately 90 to 100. There has been an accompanying increase of more than twenty per cent in pay-roll in production of capital goods. An advance which permits such improvements in balance among fields of enterprise obviously produces an increasingly strong basis for the future. The evening-up process gives stamina and vigor to an economic structure as surely as averaging down spreads weakness.

During this period the production of iron and steel stepped up from 55 per cent of the 1929 rate of 91, textiles from 88 to 104, cement from 57 to 87, food products from 80 to 93, and so on through the list.

In services the volume of which tends to reflect activities in all fields there has been like progress. The national production of electric power, for example, went from 97 to 125. Railroad carloadings rose from 57 per cent to 75.

Such data reflect both progress made and the progress yet to be attained. They also suggest improvement in opportunity to deal with problems existing in some fields. In production of bituminous coal, for instance, the fall season of 1936 opened generally with a higher rate than for the same season since 1930. In western Pennsylvania, Ohio, and Kentucky output in September was 57 per cent ahead of output in September of last year. In West Virginia the percentage of increase was 41. There has been comparable improvement in the lumber industry, which seventeen months ago was at an index of 35.3 in production, and in October, 1936, at 67.7; in the Pacific Northwest orders for lumber in the last week of October were 20 per cent or more over current production. In the cotton textile industry, which has had its troubles, there was a strong demand for cloth in September, and the mills of the country used more cotton that month than in any September for the twenty years for which figures are available. In early October sales of finished cotton goods in wholesale and retail markets were better than a year before, and shortages were developing in most kinds of unfinished goods for immediate delivery.

Such improvements as have been mentioned are reflected in all of the main areas of the country. Even those which have been most affected by such untoward conditions as crop failures and strikes have shown for the areas as a whole a greater volume of current business than a year ago. In the four weeks ending with October, debits to individual bank accounts,—if these figures are taken as a rough measure for purposes of comparison,—ranged from 9 per cent in the Northwest over the corresponding period of 1935, through 14 per cent in far-western states, 19 per cent in the Southeast, 20 per cent in the Southwest, to 25 per cent in the eastern portion of the Central West.

It may fairly be concluded, on the face of the figures, that since the summer of 1935 the United States has been making more progress than some other countries which had gone farther in recovery. The progress of

England is sometimes cited. In this period the index number of industrial production in England rose from 104 against the 1929 level to 116, or by about 12 per cent; in the United States that corresponding index number rose from 71.4 to 92, or by 28 per cent.

Report on Canadian Trade Agreement

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., November 23, 1936.—The State Department has just made public a tabulation showing the trade between the United States and Canada during the first half year that the trade agreement between the two countries has been effective.

"Importations from the United States of wallboard, building board and insulating boards, on which the Canadian duties were reduced about one third, increased by $74,000, with smaller increases on cardboard and bristol board," says the State Department.

"Gains in sales to Canada were made by a wide range of American manufactures of paper and paper products, which received varying duty reductions, with an increased trade during the first half year of the agreement by $263,000. The principal paper products affected were printing paper, photographic paper, waxed paper, tissue paper, paper bags, and paperboard containers."

In connection with imports into the United States from Canada during the same period the State Departmen says that "newsprint paper and paper making materials, for which the requirments of the American market area far greater than the domestic supply, have for years made up the largest group of products imported from Canada. They have long been on the free list of the United States tariff, and the American undertaking to Canada that most of them would continue duty free was an important feature of the Canadian-American trade agreement.

"During the first half year of its operation, the importation of standard newsprint paper from Canada increased by $5,600,000; of the types of wood pulp bond free (mechanical, soda and bleached sulphite) by $1,300,000; and of pulpwoods, by $331,000, reflecting an increase over last year in general paper consumption in the American market. This group together accounted for three quarters of the total increase in American imports from Canada in products bound free by the agreement, and about one quarter of the total increase in imports of all products. The domestic producers of newsprint during this period maintained their volume of 1935."

Sutherland Announces Cash Bonus

KALAMAZOO, Mich., November 24, 1936.—The Sutherland Paper Company will distribute a cash bonus amounting to $25,000 among its employees on December 23, it was announced last Monday by President L. W. Sutherland following the monthly meeting of company's board of directors.

Each employee of the converting plants or paper mills who has worked for the company one year or more will receive a bonus check equivalent to one week's wages, it was stated. Every worker who has been with the Sutherland company between six months and one year will be given a bonus check of ten dollars. Employees who have been with the company less than six months will receive five dollars.

Approximately 1,300 employees will benefit from the Sutherland Paper Company's cash bonus distribution, which will go to both men and women workers.

Production Ratio Report

The following statistics are based upon paper production reports to the American Paper and Pulp Association:

COMPARATIVE MONTHLY SUMMARIES

Months	1936	1935	1934
January	76.1%	65.8%	.....
February	77.9%	70.0%	.....
March	76.0%	70.5%	.....
April	82.3%	70.0%	.....
May	81.6%	69.4%	.....
June	80.7%	72.3%	.....
July (b)	80.0%	67.8%	.....
August	81.5%	70.9%	.....
September (c)	84.0%	75.0%	59.4%
October	87.6%	75.6%	64.7%
November	.....	75.3%	61.7%
December (a)	.....	74.3%	62.1%
Year	.....	71.2%	.....

COMPARATIVE WEEKLY SUMMARIES

CURRENT WEEKS, 1936		CORRESPONDING WEEKS, 1935	
*November 7	86.7%	November 9	75.5%
*November 14	86.1%	November 16	75.2%

The following statistics show the number of mills reporting by ratio groups:

Ratio Limits	Number of Mills Reporting, Current Weeks: November 7, 1936	November 14, 1936
0% to 50%	53	38
51% to 100%	267	186
Total Mills Reporting	320	224

* Subject to revision until all reports are received.
These data exclude (a)—Christmas Day, (b)—Fourth of July, (c)—Labor Day.

PAPERBOARD OPERATING RATIOS

According to reports from the National Paperboard Association, per cents of operation, based on "Inch-Hours," were as follows:

Months	1936	1935	1934	Months	1936	1935	1934
January	61%	61%	....	July	69%	59%	....
February	67%	67%	....	August	75%	65%	....
March	68%	67%	....	September	76%	69%	62%
April	70%	61%	....	October	82%	76%	63%
May	68%	61%	....	November	....	70%	56%
June	68%	65%	....	December	....	60%	(a)53%

Week ending Nov. 7, 1936—79% Week ending Nov. 14, 1936—81%

Roofing Company Acquires Avery Mill

The mill of the Avery Paper Corporation, at Avery, Ohio, will in future be operated by the Weaver-Wall Company of Cleveland, manufacturers of roofings and asphalt shingles.

The Weaver-Wall Company was organized fourteen years ago. Its officers are: president, A. L. Wall; vice president and secretary, H. L. Stegman, and treasurer, Hazel McDonald.

The Avery Paper Corporation, organized in 1931, acquired the Hoover plant at Avery and there operated a paper mill for some time. The plant has been closed for several years.

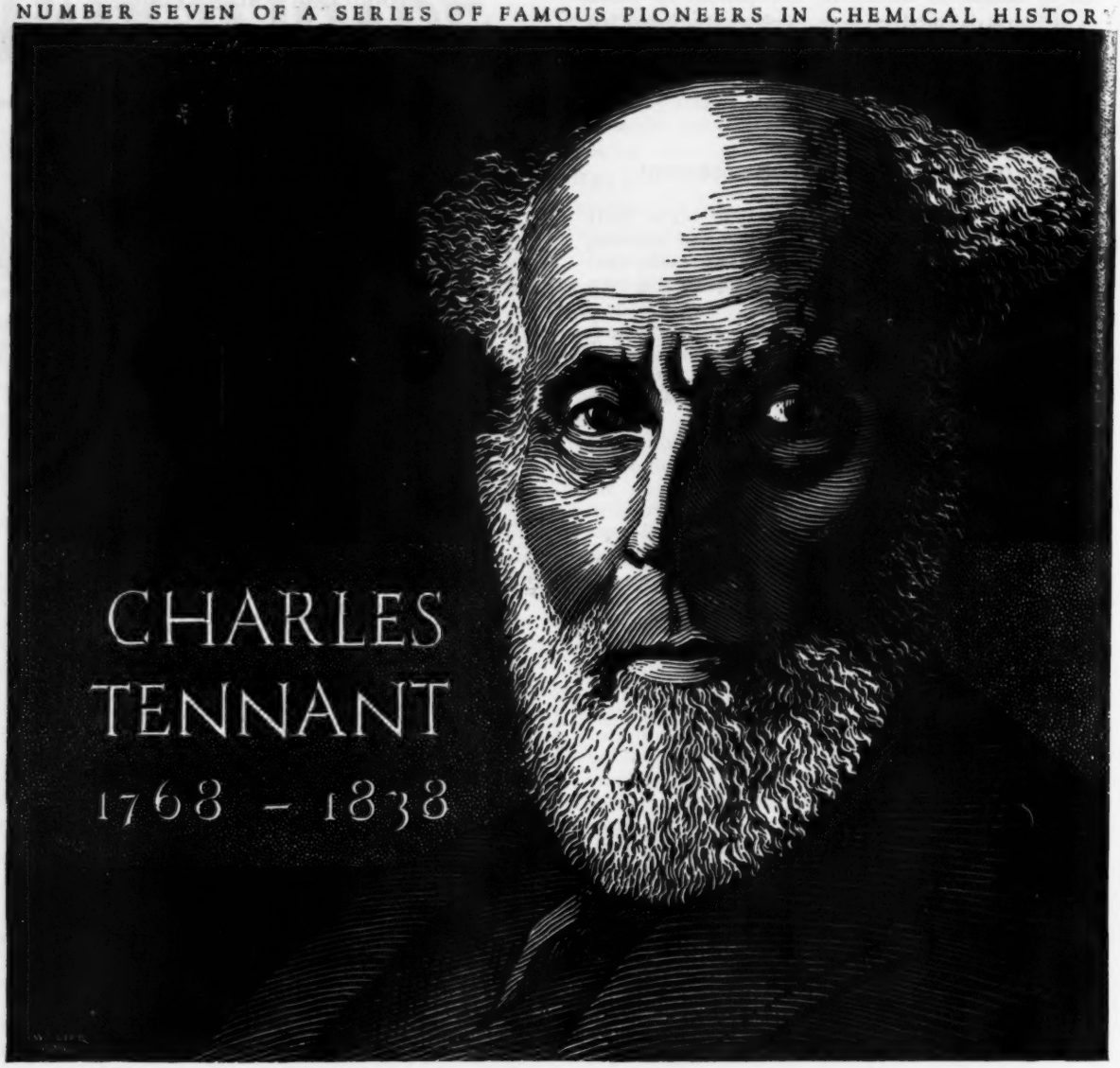
At the present time a number of workers are employed in reconditioning the plant and preparing it for additional equipment which will increase the production of the mill.

Negotiations for this transaction were handled by Mansel L. Rankin, paper and pulp mill broker, with offices at 257 Jackson street, Sandusky, and A. L. Wall, acting for the Weaver-Wall Company, Cleveland, Ohio.

Curt R. Burkhardt Resigns

The Sterling Paper Converting Company, of East Rutherford, N. J., announces that Curt R. Burkhardt, of Teaneck, N. J., previously with the company, terminated all connections with this organization on Wednesday, November 4.

NUMBER SEVEN OF A SERIES OF FAMOUS PIONEERS IN CHEMICAL HISTORY



TEXTILE bleaching was shortened from a matter of months to a matter of hours when Charles Tennant, an "eminent practical chemist" of Glasgow, produced the first bleaching powder by saturating lime with chlorine. Others had recognized the possibilities offered by the decolorizing action of chlorine upon fabrics, but Tennant made chlorine available in commercial quantities in a form that could be transported and readily applied. In the United States, the earliest production of bleaching powder was in 1895, when Mathieson placed the first domestic product on the market. Since this early pioneering venture, Mathieson has been in the forefront of new developments in the production and distribution of chlorine and chlorine products and in the efficient application of these products in textile bleaching, in paper and pulp bleaching, in petroleum refining, in water purification and in other important fields.

In its Annual Proceedings of 1839, the Institution of Civil Engineers, London, said of Charles Tennant: "The great revolution in the practice of bleaching... was carried out by the discoveries made by him, first of the Solution of Chloride of Lime and afterwards of the dry Chloride of Lime, or bleaching powder—an inestimable gift to the arts with which the name of Mr. Tennant will always be associated. He... will long continue to be extensively known and associated with practical science."

The MATHIESON ALKALI WORKS (*Inc.*), 60 East 42nd St., New York, N. Y.

SODA ASH . . . CAUSTIC SODA . . . BICARBONATE OF SODA . . . LIQUID CHLORINE . . . BLEACHING POWDER . . . HTH AND HTH-15 . . .

Mathieson Chemicals

AMMONIA, ANHYDROUS AND AQUA . . . PH-PLUS (FUSED ALKALI) . . . SOLID CARBON DIOXIDE . . . CCH (INDUSTRIAL HYPOCHLORITE)

Section of the
Technical Association of the Pulp and Paper Industry
Edited by Ronald G. Macdonald, Secretary

Recent Progress on Color Problems In the Paper Industry*

By Lester C. Lewis[1]

Abstract

Color, as the quality of first importance in many papers, has received a great deal of attention from papermakers and dye manufacturers. Only recently have several powerful techniques been brought into active use in the industry; so that new results and still greater efficiencies in the use of color are both being obtained, and to be predicted for the near future. The techniques are:

1. *Spectrophotometry, particularly with recording instruments.*
2. *Grading (intelligent use of spectrophotometry).*
3. *Calculation of results by the theories of light in diffusing media.*

The problems considered are problems of producing

1. *Bleached pulps*
2. *Proper colors for printing papers*
3. *Optimum chromaticity for white papers*
4. *Useful gradings*
5. *Transparent papers*
6. *Opaque papers*
7. *Saturated colors*
8. *Controlled dyeing*
9. *Optimum results in hiding raw stocks with coatings.*

The color problems encountered in making paper are intimately connected with the problems of the preceding speakers on pigmented films. This is true in that paper is used with ink but more particularly because the theory of color in diffusing media is the great problem in each case.

However, recent progress in the industry has been largely in the direction of developing the consciousness of spectrophotometric methods. First it was realized that simple measurements of reflecting power are of considerable value in grading; then came the elaboration of spectrophotometry, for the specification of color and research. So, since our host, M.I.T. is particularly interested in the problems of industrial physics just now, it will be preferable to turn aside for a moment to the manner in which these color problems are presented to the industrial physicists.

NOTE: The question "What Are The Color Problems of the Paper Industry?" has been put to the Technical Association of the Pulp and Paper Industry by the Inter-Society Color Council. This council of which TAPPI is a member is fostering cooperation by eight professional societies on color problems. Many of these are common to several professions; and those problems which are not common are usually closely related to some problems of other societies. The writer, as chairman of the I.S.C.C. committee for TAPPI on a survey of "Terms, tastes, and problems", earnestly requests comment on this paper as a general survey; and submission of detailed problems to him.

* Presented at the Conference on Color, Massachusetts Institute of Technology, Cambridge, Mass., July 23-25, 1936.

[1] Member TAPPI. Physicist, Mead Corporation, Chillicothe, Ohio.

How is Problem Stated?

The paper industry had, in 1933, a well publicized example of the manner in which such problems are placed. It was necessary to the industry, and permitted by N.R.A., that some sort of quality grading be established for white book paper. A large number of manufacturers submitted samples with what proved to be a very conscientious attempt to label them with a correct grade. Three or four of the larger manufacturers, with extensive research facilities, then tested these papers for every conceivable quality which might determine the grade.

Here enters the placing of the problem to the physicists. Two of us in the industry were asked to submit a single figure to grade color. No further description of the figure was given to the physicist. He had to re-word it for himself something like this, "Here are 60 samples of paper, varying somewhat in gloss or opacity, but principally in spectral reflectance. They range in brightness from 70-90, in purity from 0-10 per cent, and somewhat in hue. They are to be arranged in four grades, and the presumably correct grading by the manufacturer shows the samples in any one grade to vary widely in purity and somewhat in hue. This grading must have some relation on the one hand to the customers' requirements, and on the other hand, to the manufacturers' cost. The higher, or "A" grade sheet, presumably, is the one which is worth more to the customer than any of the other three and has cost the manufacturer more to make. On the other hand, our grading must be rather independent of the whim of the customer for a particular chromaticity."

Independently the two physicists had been using the reflectivity at 450 mu. in their own research as the sort of figure demanded. These results submitted to the grading committee were so strikingly in agreement with one another and with the manufacturer's rating that this quantity was adopted as a grading quantity. It was one of the two necessary, and was given the name of brightness because that term was in common use in the industry for approximately this quantity graded visually. This term is unfortunate but the choice of a spectrophotometric defini-

tion has been very thoroughly justified by three years experience.

We realize now why this is true. The grading is principally for brightness in the sense of reflectance level because the high reflectance levels on one hand are desirable from the user's standpoint, and on the other hand, costly from the manufacturer's (highly bleached materials, pigmented fillers, etc). However, the reflectivity at 560 mu. would not be used for the following reason. Consider two sheets in the same grade by the present rating, let us say 75 per cent brightness, made identically except that the blue dye has been varied to suit the customer's whim so that sheet "A" has 82 per cent reflectivity at 560 and sheet "B" has 77 per cent. "A" is yellower than "B" because it is to be used in a horticultural magazine rather than in a "general" magazine, let us say. The two sheets belong in the same grade and must be graded by the blue reflectivity which is unaltered by this dye. The suitability of this grading definition is a matter of accident that the raw material is yellowish. Many raw materials are, however, yellowish, including flours, and textiles, for instance. It seems very possible then that this type grading should be used in other industries in which case particularly a more suitable terminology should be adopted. My suggestion would be that we call reflectivity at 450 mu. (or 400) bluflect. So much by way of illustration.

Economic Importance of the Color Problem

Paper means a great variety of things. Recent classifications have shown over a thousand well-recognized names for types of paper and sometimes as many as fifty of them relate to a single physical product. However, a very comprehensive survey *(1)* by Baird of the Forest Products Laboratory showed that color was the quality of first importance in the larger numbers of papers. Of fifty-one properties graded, six optical, the color was of second importance for the whole industry.

This industry is a billion dollar industry, about half of whose products must be carefully watched for color. Color is the most important property of that large portion of the industry, making printing papers. Perhaps 10 per cent, or a little more, of the total production of the industry is in what we should call, colored paper, that is, dyed to a purity of over 10 per cent. The importance of coloring in "white paper" far outweighs that of colored paper.

I have divided the color problem of the whole industry into about nine classifications; the problem of bleaching pulps; of producing the proper colors for printing papers; of producing optimum chromaticities of white paper; the problem of grading; the problem of producing transparent papers and opaque papers; the problem of producing saturated colors; finally, general processing problems, such as the science of dyeing and of hiding with coatings. There are many problems in the field of so-called specialty papers, papers of novel appearance which are probably not thoroughly covered but the classification is sufficient for the present purpose.

The industry is concerned particularly with the production of colors; this means, for the physicists, a division into the problems of,

a. Specification
b. Physical means of production
c. Inspection

As in the case just cited of brightness specifications, the industrial physicist in this industry finds himself confronted with the psychological and economic problems. In other words, the problem does not come to him stated clearly, but he must seek the psychological and economic aspects in order to state it clearly for himself. This aspect of the color problem we shall not be concerned with further, but we are compelled to take up the fundamental physical problem, the optics of diffusing media.

Theory for Optics of Diffusing Media

There has been a very great interest in the past few years in this subject. The work of Gurevic *(2)* and Kubelka-Monk *(3)* and Ryde *(4)* on the theory of this subject has all been used by the paper industry to some extent. Dr. Steele *(5)* of the New Jersey Zinc Company and Dr. Judd *(6)* of the Bureau of Standards have extended the work of Kubelka-Monk to make it useful to the paper trade.

This theory of Kubelka-Monk is certainly not complete but it has shown remarkable agreement with the facts in several cases. It is based upon the assumption that the diffusing media can be described by merely two constants; the absorption co-efficient K, and a co-efficient S, called a scattering co-efficient, or better called with Kubelka-Monk, a remission constant. By the term remission is meant, S denotes the fraction of light scattered in the direction opposite to the incident.

The following brief discussion of the theory is intended, on the one hand, to emphasize the physical ideas as applied to paper; on the other hand, to show the equivalence of the two theories here called "Gurevic" and "Steele."

The diagram in Fig. 1 sketches the action of a very thin layer of paper in diffusing the already diffuse light striking it. A fraction p is transmitted, a fraction r reflected; where "transmission" means exit from the layer in *any* direction having a forward component, and "reflection" means exit from the layer in any direction having a backward component.

The Gurevic theory results in generally simpler expressions (particularly for transmission) whereas the constants of the "Steele" theory have more simply visualized physical content.

Gurevic		Steele (Kubelka-Monk)
$r_{dx} = K_1\,dx$	SCATTERING	S = Gurevic's K_1
$p_{dx} = 1 - K_2 dx$	ABSORPTION	K = " $(K_2 - K_1)$
$R = \frac{K_2 - \sqrt{K_2^2 - K_1^2}}{K_1}$	REFLECTIVITY	$R_\infty = 1 + \frac{K}{S} - \sqrt{\frac{K^2}{S^2} + 2\frac{K}{S}}$
$r = R\left(\frac{1 - e^{-2Lx}}{1 - R^2 e^{-2Lx}}\right)$	REFLECTANCE OVER BLACK	$R_o = \frac{e^{SX(\frac{1}{R_\infty} - R_\infty)} - 1}{\frac{1}{R_\infty} e^{SX(\frac{1}{R_\infty} - R_\infty)} - R_\infty}$
		Reflectance over any background is calculated.

$$\frac{1 + r^2 - p^2}{2r} = \frac{K_2}{K_1} \quad \text{Transmission}$$

$$p = r\left(\frac{1-R^2}{R}\right)\left(\frac{e^{-2Lx}}{1-e^{-2Lx}}\right)$$

The theory certainly implies that the particles are small in comparison with the thickness of the medium. Such certainly is not the case for paper. The diameter of the fibers used in papermaking is from 2/100 to 3/100 mm. It is found that the thickness of paper necessary to produce 99 per cent of the reflectivity varies from about 2/10 to 8/10 mm. when there is no mineral added. That is, the whole thickness of medium with which we are concerned is from 10 to 40 fiber diameters, in this case; or much less, 5 to 10 fiber diameters, when mineral loading is used.

This "optical thickness" of paper is considerably less than that of many diffusing media such as diffusing glass-

es; but much greater than that of many paints and inks made opaque by their pigment content.

Of course the length of a fiber is decidedly not small compared with the thickness of paper—1 mm. being a common length. A rather startling result followed my first attempt to detect an effect of fiber length upon the diffusion of light: there was absolutely none. Cutting a pulp from over 2 mm. to ½ mm. length produced no change in either Ro, R_∞, or the chromaticity within a very small experimental error. This, we have reason to believe, is due to the facts; first, that the number of contacts fiber to fiber is unchanged by mere change in fiber length; second, that the fibers lie in the plane of the sheet so that only the diameter is of importance in determining number of air-fiber interfaces.

We have a theory, then, based on the total amounts of reflected and transmitted light; without reference to their angle of distribution with respect to the incident. The question arises, can this theory of total reflection and transmission be usefully related to what we observe in paper.

There certainly are many cases in which this theory will be useless, the most obvious being the case of transmitted light. However, as the following discussion will show, the case of reflected light is simpler.

Many papers approximate to a perfectly diffuse reflector which emits light at an angle θ from the normal proportional to the cosine θ. For this reason, instrumentation which measures the integrated reflecting power approximates very well to the reflecting power concerned in visual work. The color analyzer of Professor Hardy is coming into use in the industry, as well as one instrument of the Razek type which has been in use for about three years.

The instruments based upon the definition of standard geometry by the I.C.I. are about equally common. The most generally used instrument in the industry (I believe there are about forty of them in use here and abroad) is the brightness tester which Mr. Michaelson has described.

It is apparently still questionable what the choice of standard illumination should be for color measurement. There seems to be no doubt that the eye should be directed at the object along the normal; but whether illumination should be diffuse, or through a rather limited solid angle about 45 deg. to the normal is not fully decided. However, the fact remains that both methods will be in trouble when very glossy samples are examined.

Most papers will have reflectance measured by either above methods identical with our theory's definition.

Some very interesting work was done by Loring *(15)* working with Hardy several years ago, showing the need for more thorough definition of transparency, contrast ratio, etc., having reference to the spectral distribution of these qualities. It has been very interesting to use Loring's spectrophotometric data to calculate the scattering coefficient on the Kubelka-Monk theory. He evaluated paper from the most transparent obtainable to the most opaque coated. The scattering co-efficient for a mm. thickness varied from 7 to 100. This work can be said to indicate a very significant figure for paper. This figure is the thickness at which the reflectance has reached 99 per cent of the reflectivity. I have used this figure because it represents a minimum thickness to determine the chromaticity of the thick layer. This thickness amounts to about half mm. for papers of the high quality rag class, for instance. Although the wave length 450 has its reflectivity determined by about half that thickness, wave lengths 650-700 have their reflectivity appreciably affected by the increase in thickness from ¼ to ½ mm. It is interesting to note that both the high opacity and high transparency (the glassine) papers require about the same thickness to obtain the ultimate color. The papers coated with minerals, on the other hand, obtain their final color in thickness from .15 to .2 mm. Still lower thickness of papers filled with mineral to 25 per cent attain their final color.

Sheet Properties

Caliper (.001 mm.)	$R_{\infty 450}$	T_{450} (calc.)	Description	
18.8	.702	.039	Antiques	I
16.9	.795	.091	Antiques	VII
9.5	.668	.291	Bonds	XVIII
3.5	.211	.723	Bonds (onion skin)	X
9.5	.698	.182	Bonds (onion skin)	XIII
8.9	.734	.173	Bonds (onion skin)	XVII
7.2	.645	.302	Bonds (onion skin)	XIV
9.3	.659	.186	Bonds (onion skin)	VI
14.7	.725	.063	Offset	II
11.7	.832	.063	Ledger	V
16.8	.787	.134	Drawing (rag)	XVI
6.8	.383	.554	Tracing	XV
10.3	.716	.095	Book (filled)	XI
10.8	.778	0	Book (filled)	XII
6.5	.695	.11	Book (filled)	VIII
10.7	.777	0	Coated	IV
9.8	.801	0	Coated	III
2.9	.156	.685	Glassine	IX

Specific Properties

Solid fraction	X_D (mm.)	K_{450}	$R_{\infty 450}$	S_{450}
.41	.316	2.81	.704	45.0
.475	.562	.79	.816	37.8
.469	.525	1.05	.757	26.8
.500	.559	1.96	.509	8.3
.520	.444	1.39	.752	34.0
.530	.358	1.00	.800	40.0
.533	.327	.75	.794	28.3
.549	.427	2.02	.703	32.0
.53	.309	2.25	.734	46.4
.58	.288	.96	.848	70.5
.607	.502	.59	.825	31.3
.538	.720	.99	.645	10.0
.655	.122	4.31	.717	77.0
.661	.175	2.78	.780	91.0
.71	.297	3.58	.715	62.7
.734	.193	2.76	.779	89.2
.795	.165	2.38	.804	99.0
.925	.400	3.44	.395	7.1

The theory just described will certainly be in trouble in answering many questions as to light transmitted by paper. Some excellent work has been done by Nolan and Van den Akker *(7)* for the Central Grading Committee of the industry on instruments for this problem. For glassine paper (the most transparent possible) the parallel transmittance ranges from 10-40 for paper showing a total transmittance of 60-85. A useful quality has been discovered in this research, namely, the transparency ratio equals parallel trans-

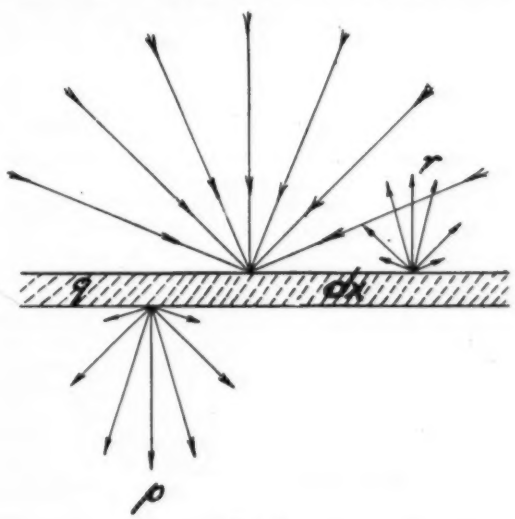


FIG. 1
Physical Assumption of the Guerevic Theory

mittance divided by the total transmittance. Of course, this discrepancy between parallel transmittance and total transmittance becomes more serious in more opaque paper. A tissue paper having a 65 per cent total transmittance has only 3 per cent parallel transmittance. This extreme difference is shown even without resorting to an extreme definition of parallel transmittance such as should be made to correlate with visual examination.

The absorption of light in a sheet of paper is not measured directly but it will be advantageous to do this for the sake of completeness in the theory. Total absorption is gotten by the subtraction of reflected and transmitted light from the incident.

Physics of Papermaking

In order to understand the problems of coloring paper It will be wise to review some fundamentals. We are principally concerned with cellulose. The essential items here are:

1. That cellulose is doubly refractive in fibers, index 1.565 length-wise, 1.530 across.
2. That the dispersion of cellulose is low, being about .0105 as against .015-046 for glass. $N_f - N_c$).

The size of paper making fibers has already been mentioned. They are 'beaten" or cut, or frayed before being formed into a sheet of paper. This is done by floating them in water, about 100 parts of water to 1 of fiber, floating them over the papermachine wire and shaking them to felt the fibers.

Two very vital points in determining color are:

1. That water is essential to the formation of paper not only in distributing the fibers but in giving rise to the bond between the fibers.

2. That tremendous differences in the amount of fiber disintegration occur in papermaking, all the way from none at all to such a complete disintegration that individual fibers are no more recognizable in the finished sheet. This is referred to as difference in hydration.

With this introduction, the color problems of the paper industry will be discussed under nine headings previously mentioned.

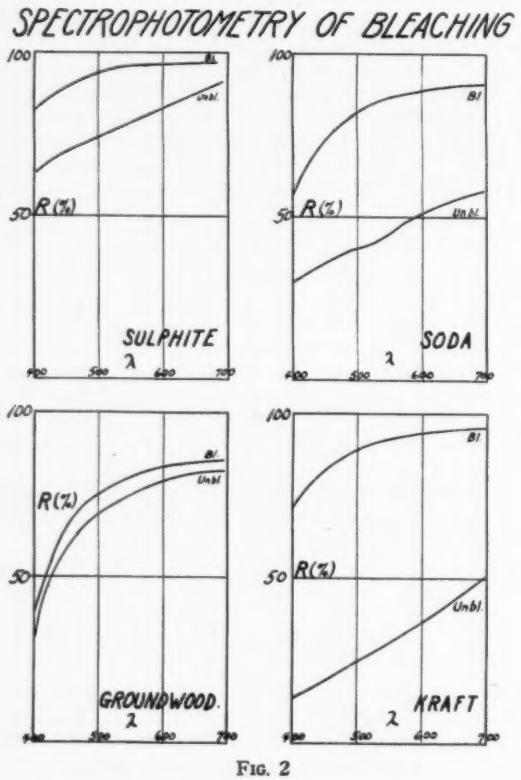


Fig. 2

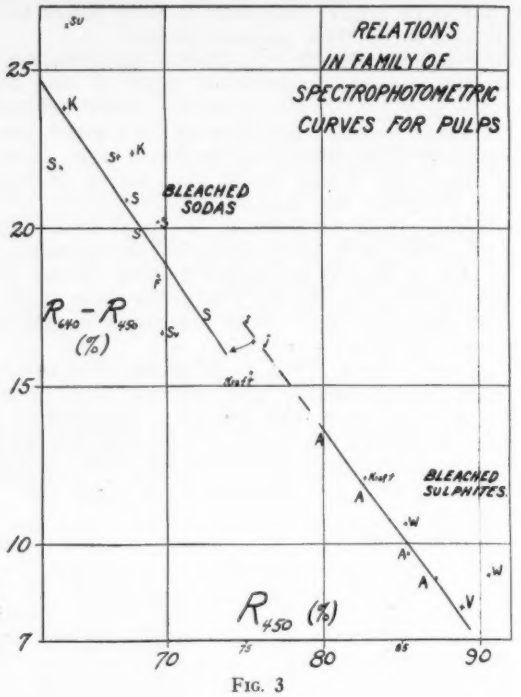


Fig. 3

I. Bleaching

Two steps are ordinarily considered necessary to convert wood into pulp ready for papermaking. The first is called cooking. It loosens the fibers from their cementing material, lignin. The second is called bleaching, the application of a chemical such as chlorine which removes the lignin leaving the cellulose fibers clean of any coloring material. The distinction between these two processes is being broken down with increasing importance attached to the bleaching process. In general the spectrophotometric analysis of the raw material, the product or the process has been neglected. However, there have been at least two notable researches lately at the Institute of Paper Chemistry which have made a start in this direction.

One *(8)* on the coloring matter in pine kraft pulp is rather thorough as concerns both pulps and extract spectrophotometry. This has not yet reached the place where the compound is identified as in a good many other sciences. A most interesting research by Dr. Brauns *(9)* seems to be getting at the essentials in bleaching. A very simple chemical addition operation, methylation, produces in the so-called sulphite pulp at least 75 per cent of the improvement in brightness which is obtained by bleaching and washing out the bleached product. Further steps in this direction may lead to a very simple modification of the dye (if we may call it such) which must now be laboriously bleached.

Tremendous differences exist at present between the various pulp processes in the amount of bleaching necessary. The accompanying diagram in Fig. 2 shows a few of these. Fig. 3 shows a rather systematic correlation between brightness and slope of the reflectance curve in large classes of pulps. Bleaching simultaneously raises the brightness and decreases the slope of these curves.

II. Printing Papers

Most of us use paper very regularly in reading. The colors of papers we use are shown in the following diagram, Fig. 4. We pick up the morning paper to read from a low brightness yellowish material. We look at the rotogravure section; a somewhat brighter result here is distinguished sharply from that of newsprint by its gloss and less fibrous appearance. We pick up a magazine to read for entertainment, from either one of the two next colors.

Our weekly news magazine is printed on a sheet of the next higher color shown, whereas, the highest grade work practical in color-printing is done on a heavily coated sheet of paper with the reflectance curve shown above.

In all these papers we have been concerned with color in a variety of ways although we may not be conscious of them all. The ease of reading has been determined by the contrast of the ink with the "white" surface, the contrast being not only one of brightness but one of hue and purity. Of equal importance are the toners used in the ink and the variations in colorimetric purity of the paper. A house or garden magazine, for instance, is printed with a green toned ink on a paper rather high in purity, hue 575 mu. sometimes greener. Of course, when color is to be printed, the color of paper becomes of even more importance. Perhaps on account of the increase in color printing in magazines. There has been a very great increase of interest in bright white papers among the publishers. We are interested, moreover, in the color of what shows through from the backside of the paper. We are most conscious of this in newsprint, but show-through is important in all but the heaviest papers. One of the weekly news magazines recently considered shipping lightweight magazines by air-mail to South America. The limiting factor in reducing the weight of the magazines was the tremendously objectionable confusion with the printed material showing through from the backside of very light weight sheets.

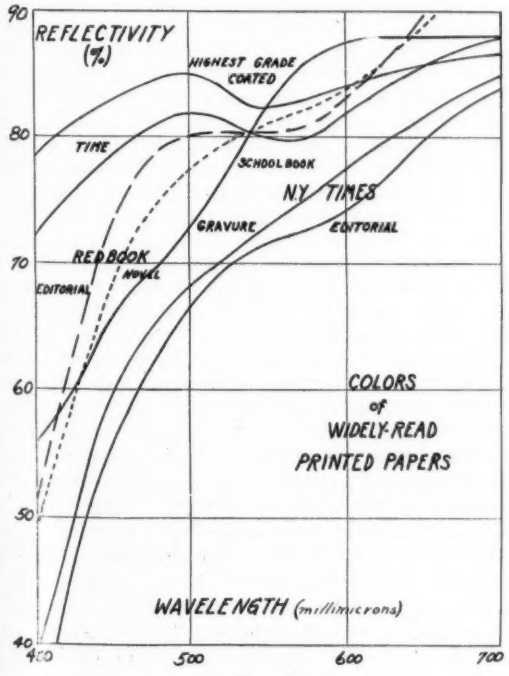


Fig. 4

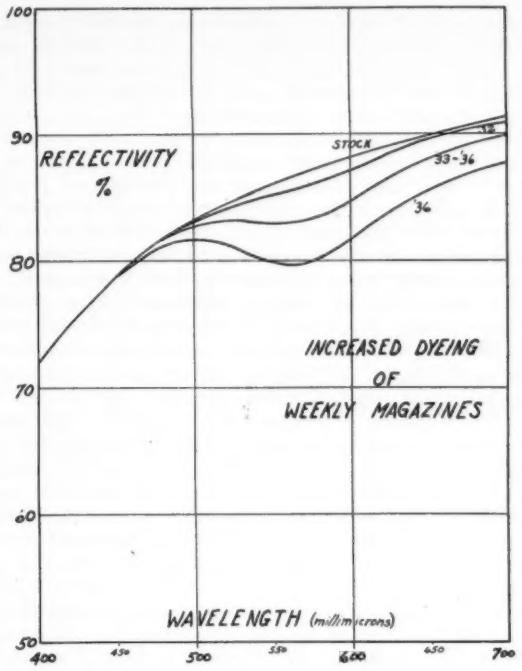


Fig. 5

III. Optimum Chromaticity for White Papers

This question, which has already been touched upon in reference to printing papers, will be handled separately because of its general interest. It is a color problem which originates in the psychological field and which must be fought out principally on that basis. The next diagram, Fig. 5, demonstrates the changes in color undergone by the paper used in magazines with some three million weekly circulation. During the past three or four years this sort of change has come about in the following way. A paper manufacturer offers to a publisher a sheet more highly dyed with blue. The publisher rather likes its appearance and all the competitive paper manufacturers change to the new color. This has been done twice in the last four years; and the writer has heard the comment at least from printing ink manufacturers that this sort of thing may be a mistake.

Dr. Judd *(10)* has studied the rating for whiteness rather thoroughly. However, this is the place to raise the question, "In what way does the rating for whiteness fit into the determination of optimum chromaticity for printing papers?" It is obvious, from what has been said that the whitest paper is not always desirable from previous empirical results. A comprehensive research on the optimum color for a variety of printing subjects should be undertaken. Something of this sort was done in 1929 by Ferree and Rand *(11)* for writing papers. There is no doubt that the whiteness rating had a place in the evaluation of many papers, to some extent for printed papers.

A further desirable extension of the work on whiteness is probably to the field of papers with low daylight reflectance. It then becomes questionable whether the word whiteness represents the quality to be graded; but the entire newsprint field is concerned.

IV. Grading

It is interesting to note that simultaneously with the development of grading for brightness in this country similar work was going on in both Norway and Germany. At

least the German work was concerned with the grading of pulps for whiteness, when they were to be used in rayon production. *(12)* Daylight reflectance is measured by the Pulfrich Stufen-photometer. A Norwegian institute for research in paper developed a grading method *(13)* in 1933 based on spectrophotometric measurement with an instrument which is now being built by Zeiss. This is an abridged spectrophotometer and the method of grading with it is based upon the subtraction of a figure representing purity from the blue reflectivity. The formula for whiteness reads B-(R-B). It is not clear just what wave lengths are being used for red and blue reflectance. It becomes interesting to compare this method of grading with the grading for whiteness developed by MacAdam and Judd. An interesting method of comparison is shown in diagram Fig. 6. A group of papers have been graded here in which the blue reflectance remains constant and the amount of blue dye is continuously increased. The present brightness grading is constant for these papers, corresponding to the fact that the addition of dye only suits a whim of the customer or a definite psychological demand in changing from one type of printed subject to another The grading by the Norwegian Papirindustriens Forsknings Institut serves approximately the function of the whiteness rating of Judd for yellows. When so much blue dye is added that the color of the sheets has passed through the neutral point and become definitely blue, the Judd rating decreases rapidly again. The P.F.I. rating should be very useful over a wide range of pulps for which the concept of whiteness breaks down.

V. Transparency

The problem of producing a transparent sheet of paper is primarily a mechanical problem of producing the proper sheet construction. The reflection of light from papers is due to the presence of interfaces fibers to air, and the production of a transparent paper requires the removal of that air. This is accomplished by the purely mechanical process of beating the pulp until it becomes capable of packing and bonding into what is called glassine. It is also interesting to note that the contrast ratio of a sheet of paper goes through an optimum as this packing is made more effective. Packing is measured by the solid fraction; *(14)* and for some average papers a value of .3 to .5 creates the optimum contrast ratio of .8 to .9. For lesser solid fractions the sheet of paper is approximating more closely to a sheet of air, while for greater solid fractions it is approximating to a sheet of cellulose. Either is comparatively transparent. A consequence of increased transparency of the more compact sheet is a much reduced reflectivity. Radiation has an opportunity to penetrate more deeply into the sheet and suffer more absorption in that case.

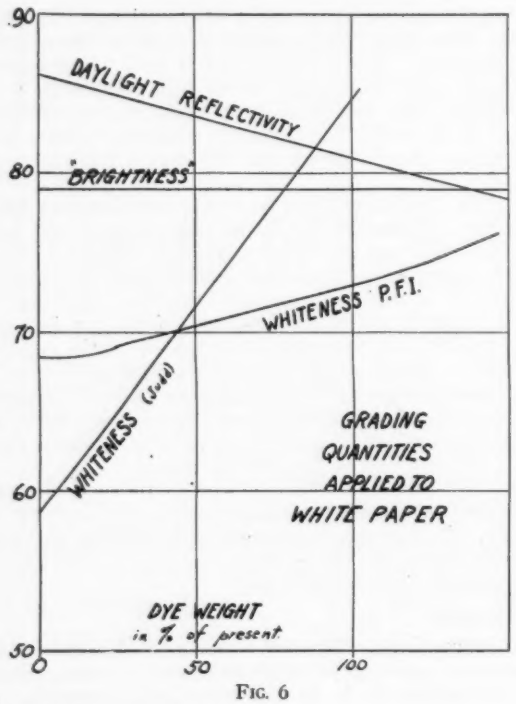


Fig. 6

The second class of transparent papers is made so after formation by impregnating with wax. The usual paraffin wax has a refractive index of about 1.44 so that the transparency is rather imperfect. The transparency of paper as affected by the refractive index of wax has been studied. This transmission shows a broad double maximum when plotted against refractive index. Consider the sheet as a Christiansen filter in which there will be high transmission for a wave length giving equal refractive indices for wax and cellulose. Because cellulose is doubly refractive, the light being transmitted through the sheet containing a wax at reflected index 1.53, will suffer some reflection under conditions corresponding to refractive index 1.565 so that transmission will not be perfect.

A further very interesting development in the science of transparent papers is the recognition that transparency varies considerably with wavelength. *(15)*. An instance is an ordinary bond paper with .77 contrast ratio through the middle of the visible spectrum, rising to .90 at wavelength 400 mu. dropping to .70 at 700 mu. Not even a beginning has been made, however, in specifying transparency or contrast ratio completely—by the necessary three variables, brightness, dominant wavelength, and purity.

VI. Opacity.

We go on logically to the problem of producing an opaque paper. This has become of increasing interest in the past few years. For years it was demanded of a Bible paper that it be light in weight but opaque and the requirement was fairly well met by the use of relatively low refractive index fillers such as calcium carbonate. Of late years there have been large demands for light opaque papers to be used in "omnibus" volumes, or even in letter heads. Simultaneously, there have become available high refractive index fillers, particularly ZnS and TiO_2. If the result of using this pigment were to substitute a matenal of refractive index of 2.5 for one of 1.6, in a cellulose of index 1.53 it would be simple to understand what opacity increase would be gained. However, such is not the case. The pigment must be introduced into a paper having sufficient strength to withstand wear and the weakening of the pigment filler. Therefore, the material of high reflectivity index is being introduced into a sheet already very largely made-up of cellulose air interfaces. We now add cellulose pigment and cellulose air interfaces. The result is that the increase of opacity is not nearly what might be expected at first thought. The amount of reflection taking place at perpendicular incidence from air to TiO_2 is about 18 per cent, whereas, there is about ⅓ that amount with the incidence from cellulose to TiO_2. The increase in opacity is, however, even at the smaller percentages, economical to add to paper, so considerable as to be well worthwhile. One trick should be mentioned which is interesting physically. The increase in brightness, by the addition of ti-

tanium, is so high that an absorbing material can then be added to increase the absorption, although the brightness advantage is cancelled. In a concrete example a paper having 79 per cent reflectance and 17 per cent transmission was so changed by this treatment just described that it retained its brightness when the transmission was reduced to 10 per cent. By the absorption 7 per cent was removed from the transmitted light and thrown into the absorbed without detriment to the brightness of the sheets.

There remains to consider a very interesting advantage of the high refractive index pigment; that is, the capacity of the sheet to retain its opacity when waxed. This property is used very considerably in bread wrappers, etc. Using as an index, as we have before, the figure of percent reflection at perpendicular incidence, we get the following:

	Per Cent Reflected
Cellulose Air	4.0
Cellulose Wax	.1
TiO_2 Wax	7.5
TiO_2 Air	18.0

The facts as to the opacity of high strength pigmented papers have been thoroughly investigated in recent years by the pigment manufacturers. A great deal of interesting experimental data is at hand to which a theory should be applied with such extension as necessary.

There are two subjects remaining of considerable interest concerning the opacity of printing papers. The first is the matter of useful definition. The contrast ratio is the useful quantity here. Printing ratio is the ratio of reflecting power backed by black to the reflecting power backed by a stack of the sheets we measured. It has been a very satisfactory working concept but to complete it, work on spectral distribution such as done by Loring must be extended. Moreover, there is the possibility that two papers of equal printing ratio will be of quite different value because of the differing graininess of the paper so that one obscures the printing on the reverse side of the paper much better than on the other (that is, angular distribution of transmitted light is again important).

VII. Saturated Colors

Hitherto, we have been considering approximately achromatic colors. The chromatic colors will bring in much more diverse problems of specification and manufacture. Colors are going to be specified by the use of spectrophotometer much more accurately than before. Hatch, in the West Coast paper industry, *(16)* has been using a color analyzer of the Razek type for the past three years and is very enthusiastic about it. It is my understanding that a color analyzer of the Hardy type has also been in use for fully as long in the industry, and several are on order.

As concerns production of colored papers, the industry is interested, of course, in such things as the work of MacAdam *(17)* in demonstrating the large opportunity for more saturated colors. The speaker is acquainted with some attempts that have been made along this line. One rather disappointing experience was the attempt to produce such greater visual efficiency by the use of titanium pigment. As this attempt was made, however, the object was defeated because the high refractive index pigment so successfully hid the dyed paper. Large amounts of dye were added in an attempt to make the brighter color; but the experience served only as a vivid reminder that in order to have appreciable coloring by absorption there must be opportunity for appreciable penetration of light into the medium.

As regards paper's fastness to light (or other agents) the field has not been touched. An outstanding fact is that a committee of the Technical Section, Papermakers Association of Great Britain and Ireland *(18)* has surveyed the field. Seven methods of specifying fastness were proposed and investigated; five were found practically useless, the two remaining of doubtful value and complicated. The survey was an excellent illustration that, "a house of color science not builded upon spectrophotometry must fall." Once the spectrophotometry of such a large problem is known it can certainly be simplified for trade use.

VIII. Dyeing

Coming now to the science of dyeing paper we are concerned with all the papers mentioned, white or colored. It is a field which the chemist has had to himself for years, a field of much complexity and one in which great progress has been made due chiefly to the enterprise of the dye companies. The speaker has had sufficient experience with the application of spectrophotometry and the Kubelka-Monk theory in this field, however, to convince him that a great deal will be done in the near future in applying these to the dyeing of papers.

The work of Dr. Rose *(19)* and his associates in dyes has been tremendously interesting. We shall recall simply that a dye must have its particle size reduced below a rather well defined maximum before it becomes substantive, that it then wanders into the fiber. A great deal of paper dyeing, however, as Rose has shown is a matter of lake production and for that reason is rather simple. It is a matter of experience that two factors have a rather large influence on the color of paper, its purity particularly. These are so-called hydration, or the amount by which it has been reduced to the transparent glassine; and the calendering, or pressure to which a sheet is subjected after drying. These two affect the color in probably similar ways. It is roughly stated in the industry that the same amount of dye which has been applied to a relatively raw fibered sheet if applied to glassine will double the depth of shade and that calendering, as ordinarily applied will increase the depth from 10 to 15 per cent. Both of these factors decrease the number of air cellulose interfaces at which the reflection can take place and thereby increase the number of transitions through dyed fiber. A similar observation has been made in the case of undyed paper that the daylight reflectance drops 5 to 10 per cent, for an increase in solid fraction from .2 to .5 *(20)*. There are other influences which materially effect the purity obtained in paper color from a given amount of dye. However, these factors vary only within manageable limits for any one grade of paper.

The speaker has been interested to find that the spectral reflectance curve of a paper as the dye in it is increased, follows, for a good many papers, rather accurately, the Kubelka-Monk theory. That is, the absorption constant K, at any wave length, is rather strikingly proportional to the weight of dye. This result has been confirmed by some results of Davis of Kimberly-Clark Corporation, and Harrison at the Institute of Paper Chemistry. *(21)*. However, the speaker has found measurable deviations in the case of black dyes which probably would obtain in any high absorption. There is evidently needed a far more rigid theory for these cases. However, it seems, at present, as if the Kubelka-Monk theory would usefully cover 90 percent of a theory's applications in the paper industry. Consider for a moment, the usefulness of the concept dye affinity $= \frac{(\Delta K)\ \lambda \text{ of max. absorption}}{\text{Concentration of dye on fiber}}$

I have found this figure to vary very little for most dyes when used with a variety of sulphite pulps, whether bleached, unbleached, or semi-bleached. Once this fact has been established, a source of confusion is removed for the practical papermaker. For unexplained variations

in paper color he feels there is a reason in pulp variation —but he cannot distinguish between actual variation in the pulp's reflectivity and variations in its affinity. Practically speaking, we must conclude from our work, this is entirely variation in the pulp's reflectivity and must be eliminated by the pulp mill.

IX. Coatings

In the past five years a large part of the industry has become vitally interested in a problem of hiding power rather similar to that of the paint industry. Large quantities of paper are being made to which a light-weight coating of pigment and adhesive has been applied. For a rough comparison with the paint industry, it is interesting to note that these light coatings correspond to ⅛ to ¼ lb. per 100 square feet. These light-weight coats are obscuring rather effectively the colors shown as of pulp novels. It is impractical to coat these so heavily that resulting color is equal to that of a sheet with high grade pulp. However, the primary object is to produce a smooth surface which prints well; and the color is bettered sufficiently so that the product replaces considerably more expensive papers of the past. Davis has found the theory valid, for this important problem.

The optical advantages of these light-weight coatings are very marked for the pigments ZnS of refractive index, *2.37* and TiO_2 of index *2.52*, Ball and Lane *(22)* have recently demonstrated many interesting facts concerning the relative merits of a coating and of a filling (rather uniformly distributed through a paper). In a usual weight writing paper, a feasible coating has a considerable advantage in brightness but an appreciable disadvantage in opacity compared with the paper carrying an equal weight of filler.

These more spectacular facts should not blind us to the larger field of the optics of paper coatings still widely used.

Conclusions

To sum up our survey, we return to our original thesis, "The past five years have seen a tremendous advance in the paper industry's consciousness of spectrophotometry—very considerable fruits of this method." Five years ago the papermaker was very skeptical—"Hue," he said, "is all the customer looks at in a paper's color," and he was satisfied with his progress on color problems.

Brightness or blueflect, sharply defined, measured for raw materials and papers, and recorded consistently, began to be useful to him. Prediction could be made of the effects of blending pulps; Kress and Laughlin showed how characteristic of a paper brightness was—how independent of many paper-making variables. Concrete values in new products, bettered control of process were much more persuasive than the mere advantage of grading.

Then followed useful applications of the Kubelka-Monk theory. More of these must come in the near future: the constant S of the theory be related to the refractive indices of the media, for instance.

The immediate future belongs to complete spectrophotometry, recording instruments—and the mathematical theories reviewed—both the general and the detailed theories.

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New System of Complete Process Control

A new system known as the Coordinated Control System, for automatically operating all of the technical operations and factors of an industrial process, has been announced by The Bristol Company, Waterbury, Conn. This system makes it possible to put even the most intricate scientific process under complete automatic control, thus eliminating the necessity of leaving the manipulation and control of critical operations in the hands of plant operatives.

The control system is for processes that are developed and perfected in the laboratory and pilot plant, and depend on rigid control of such factors as the time of operations of valves (all sizes up to large gate valves), pumps, blowers, dampers, etc., and the control at a definite value or according to a time program of such variables as temperature, pressure, liquid level, flow, humidity, and speed for their success. It has been found in a number of cases that the Coordinated Control System was the tie-over from the experimental stage to the full-scale plant stage that made for success.

The Coordinated Control System can be applied to any process of which the exact schedule of operation for best over-all results is known—processes which depend upon close control for product quality—processes that give trouble because their schedule of operation is such that operators find it difficult to follow them manually.

The exact "formula," sequence of operation, or control point of each factor affecting the quality of product and yield, that is recommended by the designer of a process can be built into the Coordinated Control System. The control system carries out each step and controls each factor with split-degree accuracy.

The Coordinated Control System is an automatic machine built in the form of a master control station. It consists of recording and controlling instruments built around the so-called "Mechanical Brain." Each system is designed and engineered for the particular process on which it is used. The instruments are standard instruments selected for their ability to perform a given duty in cooperation with each of the other instruments in the system.

The "Mechanical Brain" coordinates the efforts of instruments and automatically regulates all of the operations in the process. It is in a way the "pace maker" or "monitor" in that it regulates all of the operations, making them take place in their proper sequence and run for a scheduled time.

Bulletin 46OT describes this control system.

Forms Robert H. Scanlon Inc.

Robert H. Scanlon, formerly with Powell River Company, Ltd., has organized the firm of Robert H. Scanlon, Inc., to specialize in newsprint paper. The new firm will be located at 405 Montgomery Street, San Francisco, California.

New England TAPPI Discusses Enzymes

The New England Section of the Technical Association of the Pulp and Paper Industry met at the Nonotuck Hotel, Holyoke, Mass., Friday evening, November 20, 1936. W. L. Foote of B. F. Perkins & Sons presided as Chairman.

The speaker of the evening was J. J. Willaman, Research Director of Rohm & Haas Company, Bristol, Pa. who talked on "Enzymes in Industry."

Dr. Willaman states that enzymes are catalysts that start or speed up chemical action. Enzyme action digests food that is eaten. There are digestive enzymes in all animals. This includes pepsin and trypsin that begin and complete digestion. Wood rotting fungi act on cellulose which is strongly resistant to most materials. Action usually begins in a watery medium.

It is generally advisable to dilute enzymes with water enzymes until in the body at about 37 deg. C. Although action takes place at freezing conditions but very slowly. The optimum condition for say an hour's treatment requires a temperature of from 40 to 50 deg. C. The proper pH for pepsin is about 1.5 and trypsin about 7 or 8. The substrate adsorbs the enzyme. In most cases salst (electrolytes) must be present (1-1.5 per cent).

The brewing industry requires enzymes to produce sugars from malt (starch). The grain is sprouted at which time the diastase is at a maximum. This is acted on by enzymes. It was first called a ferment.

In cheese manufacture an enzyme is added to milk. Rennin is used for this purpose and is obtained from calves' stomachs.

In leather manufacture it is used in the baiting process. Dog dung was formerly used to produce fermentation. About 1900 it was found that it was enzymes contained therein that did the work. Prepared enzymes is now generally used for baiting and hair removal.

Enzymes are used in the textile industry for desizing (removing wax and galatin) the warp yarn. If acids were used for this purpose the fiber would be weakened.

In the sugar industry enzymes (invertase) are used to enable the solution to be heated to 70 deg. C. to get the kind of crystals desired.

Invertase is used in sorghum and candy manufacture to prevent crystal formation and keeps the candy soft, (soft centered candies). Chocolate syrup for soda fountains requires diastase to keep it fluid.

In the paper industry enzymes are used in starch sizes and the removal of protein such as casein.

Fruit juices are kept clear by the presence of pectinase. Bakers use enzymes (diastase) in bread making to feed sugar continuously to the yeast. Oxidase is present in soy beans and is used by bakers to assure a white flour.

In the packing industry an external covering of pau paws (apupaivase) is put on meats to make them tender.

Enzymes are mild and specific in action. It is difficult to obtain pure enzymes. They are usually mixtures. Each enzyme does a specific thing. When more than one enzyme is present each will do its specific job. Enzymes will be used in the future for flax, tobacco, degreasing leather, cheese manufacture, and other purposes.

In response to a question Dr. Willaman pointed out that enzyme action can be controlled by watching its action. Action can be stopped by altering pH or by adding a material such as formaldehyde.

In answer to the question, "What is the difference between acid action and enzyme action on starch for tub sizing?" Dr. Willaman said, "Acid hydrolysis does not break down the starch granules whereas enzymes appear to break the granules."

Dr. Willaman pointed out that an enzyme once inactivated can not be activated.

The next meeting will be held at the Hotel Northampton, Northampton, Mass. on Friday, December 18th.

A nominating committee was appointed to report at the December meeting. Those appointed were Mr. Young of the Rising Paper Company, Housatonic, Mass.; Miss Lena Kelley, American Writing Paper Company, Holyoke, Mass. and Mr. Leonard.

Those in Attendance

Those present were: M. B. Newell, Stevens Paper Mills, Windsor, Conn.; Harved Drake, Stevens Paper Mills, Westfield, Mass.; Paul Terrilin, same company; W. H. Anderson, same company; R. W. Pattison, American Writing Paper Company, Holyoke, Mass.; Mr. and Mrs. L. W. Crouse, Penick & Ford Ltd., Springfield, Mass.; Con Stapley, Chemical Paper Company, Holyoke; C. H. Champion, Millers Falls Paper Company, Millers Falls, Mass.; J. Constance, same company; J. Collingwood, C. W. Rieser, Parsons Paper Co., Holyoke, Mass.; A. G. Bailey, du Pont Company, Wilmington, Del.; Lee Kolker, Mathieson Alkali Works, New York; E. A. Ellis, Downingtown Manufacturing Company, Downingtown, Pa.; H. M. Grasselt, Collins Manufacturing Company, N. Wilbraham, Mass.; J. M. Booth, Huron Milling Company, New York; W. A. Nivling, same company, Boston, Mass.; L. M. Yoerg, American Writing Paper Company, Holyoke, Mass.; W. P. Richardson, Arthur D. Little Inc., Cambridge, Mass.; A. B. Green, Needham, Mass.; J. J. Thomas, Rohm & Haas Company., Philadelphia, Pa.; R. D. McCarron, Stein, Hall & Co., New York; N. E. Higbee, Dennison Manufacturing Company, Framingham, Mass.; R. T. Emerson, same company; H. D. Pugsley, same company; W. E. Rand and A. C. LaMoureux, same company; A. L. Hayes, Stein, Hall & Co., New York; W. E. Wentworth, Clinton Company, Clinton, Iowa; P. S. Bolton, Clinton Sales Company, Boston, Mass.; A. A. Coffin, Titanium Pigment Company, New York; Vernon Woodside, Mathieson Alkali Works, New York; R. H. Doughty, Fitchburg Paper Company, Fitchburg, Mass.; A. M. Altieri; J. T. Leecock, American Writing Paper Company, Holyoke, Mass.; John Calkin, Dennison Manufacturing Company, Framingham, Mass.; Ben Johnson, West Springfield, Mass.; Art Penny, Krebs Pigment & Color Corporation, Newport, Del.; H. L. Mellen, Deerfield Glassine Company, Monroe Bridge, Mass.; F. W. Schneider, Hampden Color and Chemical Company, Springfield, Mass.; Mr. and Mrs. S. G. Stapley, Chemical Paper Company, Holyoke, Mass.; F. C. Clark, Skinner & Sherman Inc., Boston; Lena E. Kelley, American Writing Paper Company, Holyoke, Mass.; R. G. Macdonald, secretary of TAPPI, New York; W. L. Foote, B. F. Perkins Company, Holyoke, Mass; George Thompson, American Tissue Paper Company, Holyoke, Mass.; Matthew Horgan, American Writing Paper Company, Holyoke, Mass.; L. C. Reece, Whiting Paper Company, Holyoke, Mass.; J. J. Willaman, Rohn & Hass Company, Bristol, Pa.

Alan Helffrich Resigns

Alan Helffrich has resigned from the sales force of the Fraser Industries, Inc., New York. Mr. Helffrich states that his plans for the future are indefinite.

Lake States TAPPI and Wisconsin Valley Engineers Club Meet

The November meeting of the Lake States Section of TAPPI was a joint meeting with the Wisconsin Valley Engineers Club. It was held at 6:30 P. M., November 10, 1936 at the Hotel Wausau, Wausau, Wis. Dr. J. S. Fanslow, chairman of the Lake States Section introduced the speakers for the evening. They were Mr. Ward Wheeler of the Appleton Machine Company, Appleton, Wisconsin and Dr. Dan Wicker, Chief Chemist of the Thilmany Pulp and Paper Company, Kaukauna, Wis.

Mr. Wheeler traced the development of paper finishing methods from the earliest flint process to the most recently designed supercalenders. Under the headings pressure, slip action and heat the speaker discussed the operation and finishing action of modern supercalenders. He explained why the cotton or paper rolls sometimes fail after a very short period of service and then described the kind of roll that should be used to best obtain the finish desired.

In his paper on the Institute of Paper Chemistry transparency meter Dr. Wicker discussed the measurement of transparency, as defined by Webster, of papers in the glassine and grease-proof class. The speaker defined "transparency ratio" as a possible instrumental measure of transparency. He gave a detailed treatment of the connection of this measure with the visual estimate of transparency. Dr. Wicker sketched the development of the instrument and demonstrated its operation. Data was presented which showed good agreement between "transparency ratio" as measured in this instrument and visual estimates of transparency.

Allen Abrams, Marathon Paper Mills Company, Rothschild, Wis.; Emeran Ahles, Mosinee Paper Mills Company, Mosinee, Wis.; W. R. Appleman, Marathon Electric Manufacturing Corporation, Wausau, Wis.; J. A. Auchter, Nekoosa Edwards Paper Company, Port Edwards, Wis.; L. G. Barlow, Crane Co., Oshkosh, Wis.; Martin A. Baum, Marathon Paper Mills Company, Rothschild, Wis.; J. C. Barthel, Institute of Paper Chemistry, Appleton, Wis.; George J. Brabender, Marathon Paper Mills Company, Rothschild, Wis.; E. B. Broobank, Institute of Paper Chemistry, Appleton, Wis.; Martin Burke, Jr., Limestone Products Company, Menominee, Mich.; James B. Clarke, National Aniline and Chemical Company, Chicago, Ill.; Henry C. Crandall, Mosinee Paper Mills Company, Mosinee, Wis.; H. C. Crane, Fannon Trading Company, Appleton, Wis.; Richard Crane, Whiting Plover Paper Company, Stevens Point, Wis.; Myrl N. Davis, Kimberly-Clark Corporation, Neenah, Wis.; A. J. Detrie, Standard Oil Company, Green Bay, Wis.; G. K. Diekerman, Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis.

Norman Elmore, Marathon Paper Mills Company, Rothschild, Wis.; J. A. Extrom, Tomahawk Kraft Paper Company, Tomahawk, Wis.; William A. Fannon, Fannon Trading Company, Appleton, Wis.; R. A. Farrell, Marathon Paper Mills Company, Rothschild, Wis.; George W. Forcey, Marathon Paper Mills Company, Rothschild, Wis.; Herbert F. Gardner, Stein Hall Manufacturing Company, Chicago, Ill.; Paul Grady, Kimberly-Clark Corporation, Neenah, Wis.; Ray N. Hollands, Marathon Paper Mills Company, Menasha, Wis.; Carlyle Harmon, Marathon Paper Mills Company, Rothschild, Wis.; A. J. Hayes, Nekoosa Edwards Paper Company, Nekoosa, Wis.; Melburn Heinig, Forest Products Laboratory, Madison, Wis.; Allan S. Hirsch, Marathon Paper Mills Company.

Even Houland, Tomahawk Kraft Paper Company, Tomahawk, Wis.; Guy C. Howard, Marathon Paper Mills Company, Rothschild, Wis.; E. C. Jacobi, Standard Oil Company, Green Bay, Wis.; Gil H. Krohn, Globe Steel Tubes Company, Milwaukee, Wis.; Jay J. Lawson, Nekoosa Edwards Paper Company, Port Edwards, Wis.; Charles H. Lango, Marathon Paper Mills Company, Rothschild, Wis.; A. J. Leighton, Bamcock & Wilcox Company, Chicago, Ill.; F. R. Lillie, Crane Company, Chicago, Ill.; Fred P. Lohr, Marathon Paper Mills Company, Rothschild, Wis.; George E. Mackin, Forest Products Laboratory, Madison, Wis.; H. P. Madsen, Appleton Machine Company, Appleton, Wis.; C. A. Mantz, Crane Company, Oshkosh, Wis.

J. G. Mark, Dewey & Almy Chemical Company, Cambridge, Mass.; J. M. McAlear, Mason-Neilan Regulator Company, Chicago, Ill.; J. G. Merlen, Marathon Paper Mills Company, Wausau, Wis.; L. A. Moss, Institute of Paper Chemistry, Appleton, Wis.; H. W. Morgan, Institute of Paper Chemistry, Appleton, Wis.; G. D. Muggleton, Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis.; C. Murray, Crane Company, Oshkosh, Wis.; W. Neilson, Tomahawk Kraft Paper Company, Tomahawk, Wis.; Philip Nolan, Institute of Paper Chemistry, Appleton, Wis.; Donald Oatman, Marathon Paper Mills Company, Wausau, Wis.; K. E. Olson, Tomahawk Kraft Paper Company, Tomahawk, Wis.

L. E. Pagel, Marathon Paper Mills Company, Rothschild, Wis.; T. A. Pascoe, Nekoosa Edwards Paper Company, Port Edwards, Wis.; F. G. Pavlick, Mosinee Paper Mills Company, Mosinee, Wis.; I. F. Pohlmeyer, Globe Steel Tubes Company, Milwaukee, Wis.; Clyde Precerter, Marathon Paper Mills Company, Wausau, Wis.; C. H. Reese, Nekoosa Edwards Paper Company, Port Edwards, Wis.; H. B. Richmond, Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis.; Robert Rusch, Institute of Paper Chemistry, Appleton, Wis.; F. R. Salvesen, Marathon Paper Mills Company, Wausau, Wis.; L. T. Sanbarn, Marathon Paper Mills Company, Wausau, Wis.; J. P. Scobie, Mason Neilan Regulator Company, Boston, Mass.; R. L. Shaw, W. A. Jones Foundry and Machine Company, Milwaukee, Wis.; F. A. Simmonds, Forest Products Laboratory, Madison, Wis.; J. E. Spalding, Institute of Paper Chemistry, Appleton, Wis.; A. H. Stanton, Mason Neilan Regulator Company, Boston, Mass.; J. P. Strasser, Stein Hall Manufacturing Company.

R. W. K. Ulm, Institute of Paper Chemistry, Appleton, Wis.; J. A. Van den Akker, Institute of Paper Chemistry, Appleton, Wis.; E. H. Voigtman, Kimberly-Clark Corp., Neenah, Wis.; C. L. Wagner, Marathon Paper Mills Co., Rothschild, Wis.; W. E. Waymire, Westinghouse Electric and Manufacturing Company, Appleton, Wis.; S. D. Wells, Combined Locks Paper Company, Combined Locks, Wis.; W. O. Wheeler, Appleton Machine Company, Appleton, Wis.; D. B. Wicker, Thilmany Pulp and Paper Company, Kaukauna, Wis.; R. L. Youngson, Marathon Paper Mills Company, Menasha, Wis.; W. A. Zonner, Consolidated Water Power and Paper Company, Wisconsin Rapids, Wis.

Northern New York TAPPI Discusses Technical Control

The Northern New York group of the Technical Association of the Pulp & Paper Industry met at the Hotel Woodruff on Saturday, November 14, 1936. About 60 paper mill men from various sections of the state were present.

Luncheon was served at 1 p.m. after which discussion of the industry's business from the technical standpoint was held. The general theme of the meeting was "Technical Control in the Paper Industry." Frank M. Williams, president of the Williams Apparatus Company, Watertown, N. Y., was chairman of the entertainment committee and made arrangements for the session. A banquet was held in the evening at the hotel at which time George W. Sisson, Jr., Potsdam, president of the Racquette River Paper company, talked on "Technical Control from the Management Viewpoint."

E. C. Libby, Syracuse, head of the department of pulp and paper manufacture of the New York State College of Forestry, Syracuse university, was one of the principal speakers.

Dr. Libby's subject was regarding the new laboratory at the forestry school. The building was erected during 1932 and 1933. It then took three years before funds were available to equip the building properly, he said.

"The total amount of money involved in the building and equipment now," he said, "is about $250,000. The laboratory is not yet fully complete as far as the equipment goes. The installation is now going rapidly forward. The seniors and post-graduate students are the only ones allowed to use this building. There are about 35 such students now in the school.

"We train the students in chemistry and physics before they reach the time to use the new laboratory. The students in this course learn the technical points of the manufacture of pulp and paper."

The speaker described in detail the various equipment and the progress in the installation of it. He stressed the value of such training to young men who are seeking to become members of the technical staff of various paper manufacturing concerns in the country.

Mr. Williams' subject was "Recent Developments in Testing Equipment for Paper Mill Laboratories." He went into the technical side of the question and related the strides that have been made in this field in recent years. He also pointed to the value of such testing equipment to the manufacturer of paper and pulp.

Wives of the attending paper mill men enjoyed bridge during the afternoon and the banquet in the evening. Representatives were in attendance from Troy, Binghamton, Oswego, Niagara Falls, Rochester, Syracuse, and other paper manufacturing points throughout the state.

Among Those Present

Those present included P. J. Abel, Troy; W. Ayles, Dexter; W. E. Bailey, Fulton; M. H. Bennett, city; W. Blake, Dexter; James Brennan, Dexter; F. G. Calkin, Syracuse; H. D. Cook, Phoenix; H. W. Duggan, city; W. S. Gamble, city; F. C. Goodwill, Deferiet; W. O. Hisey, Syracuse; F. J. Hoar, city; F. R. Hyatt, Oswego; R. W. Hynes, Newton Falls; C. J. Johnson, Lockport; H. R. Jones, city; A. B. Julien, Dexter, H. C. Kenne, city.

C. E. Libby, Syracuse; Milton Mcguire, Lockport; Robert Nichols, Brownville; L. S. Nevins, city; W. J. O'Brien, Syracuse; G. E. Osterheldt, Newark, N. J.; G. A. Pennock, city; Homer M. Rice, city; J. H. Rich, Utica; C. F. Richter, city; J. D. Rue, Niagara Falls; Philip Silverman, Syracuse; R. W. Smith, Walpole, Mass.; Edgar Turnbull, city; Gardner Vincent, city; Dexter B. Williams, city; F. M. Williams, city; Vernon Woodside, Dexter; L. M. Woodside, Albany; S. G. Knowlton, city; David C. Knowlton, R. W. McCormick, R. D. Toole, R. W. Eelmser, city; W. Hasenbalg and M. Fischer, Binghamton.

Condor Compensated Belt in Two New Styles

Two new styles of Condor Compensated Belt, known as Style "F" and Style "B," have been developed by the Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., of Passaic, N. J. Both have the patented Condor Compensated principle of equalized ply stresses at the arc of contact, but are especially designed for those unusual conditions which require some slip rather than the extremely high coefficient of friction for low-tension operation present in the regular Condor Compensated Belt.

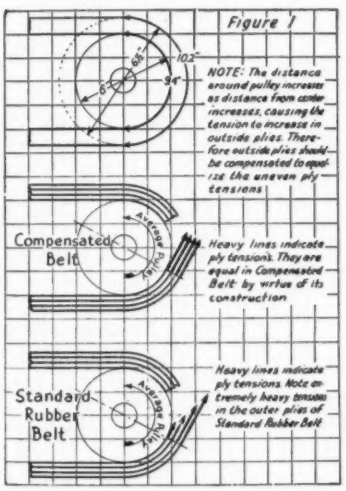


Figure 1
102°
84°
65°
NOTE: The distance around pulley increases as distance from center increases, causing the tension to increase in outside plies. Therefore outside plies should be compensated to equalize the uneven ply tensions
Compensated Belt
Heavy lines indicate ply tensions. They are equal in Compensated Belt by virtue of its construction
Standard Rubber Belt
Heavy lines indicate ply tensions. Note extremely heavy tension in the outer plies of Standard Rubber Belt

Style "F" has a red friction pulley surface and is designed for use where a slight starting slip is desired, while Style "B" has a bare-back untreated duck pulley surface and is built for conditions calling for a greater slip, or where slip is essential, as in the case of Winder Drives.

There are no differences between the construction of these belts and that of the regular Condor Compensated Low-Tension Belt except for the pulley surface. Additional details are available from the manufacturer.

The Condor Compensated principle of equalized ply stresses consists of building the belt to conform to the pulley curvature thereby relieving the excessive stresses thrown on the outer plies as occurs with standard flat belts and overcoming ply ruptures or separations, broken fasteners and prolonging belt life several times. This principle has been referred to by engineers as the greatest advancement in rubber belting since its introduction.

Parsons Paper Co. Elects

HOLYOKE, Mass., November 24, 1936—Henry V. Burgee, of the sales force of the Parson Paper Company, has been elected vice president, succeeding the late George A. Eastwood. Mr. Burgee has been covering the western territory of the Parson Company for the past ten years. He came to Holyoke from the Neenah Paper Company, of Neenah, Wis.

Boston Paper Trade Association Meets

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., November 23, 1936.—The fall meeting and dinner of the Boston Paper Trade Association was held at the Exchange Club Wednesday evening, with more than 100 present. President F. Bendel Tracy presided. There was a half-hour's reception before the dinner. In the business session, F. H. Hird, Bird & Son, Inc., East Walpole, Mass., proposed by Charles W. Fields, was elected to regular membership and N. J. Patterson, Millers Falls Paper Company, and Parsons Paper Company, Holyoke, Mass., proposed by Hubert W. Lockhart, to limited membership. President Tracy called attention to the fact that arrangements for meeting at the exchange Club were made by John E. A. Hussey.

Capt. John R. Abernathy (Catch-Em-Alive-Jack) Marshal of Oklahoma, the speaker of the evening, gave an address under the subject of "Hunting with Theodore Roosevelt." Captain Abernathy described graphically catching wolves alive with his hands and gave interesting personal reminiscences of former President Roosevelt. President Tracy appointed the following as a nominating committee to bring in names of officers to be voted on at the annual meeting next spring: C. S. Proctor, M. L. Madden, J. W. Vivian, J. G. Swift and J. E. A. Hussey. Those present included President F. Bendel Tracy, Vice-President W. J. Raybold, Treasurer T. Charles Casey, Secretary J. L. Hobson, Jack Abernathy, D. C. Smith, S. Guy Ashley, Nelson Feeley, W. Ross, W. E. Potter, F. W. Main, J. W. Vivian, Albert R. Smith, H. C. Ham, J. H. Brewer, Robert D. Neill, Roger B. Taft, W. N. Stetson, Jr., Fred Korbel, F. B. Cummings, E. L. Cummings, E. P. Hay, W. W. Newton, Chas. W. Fields, J. L. Munro, R. M. Mentone, Lewis L. Claflin, Carl J. Knutson, J. N. Weems, Jr., Wm. J. McClellan, Lee H. Hulett, G. S. Hall, C. W. Nelson, C. W. Townsend, N. S. Clarke, L. R. Mather, M. Lincoln Simpson, Ralph Humes, J. B. Ramage, E. H. Sussenguth, R. Linsert, Hubert W. Lockhart, Joseph D. Snell, A. F. Fay, A. T. Carter, Arthur M. Burr, K. L. Moses, Lewis I. Baker, Harold A. Allen, Nathan A. Hurlbut, Geo. M. Graves, Walter P. Simonds, F. D. Hatch, Frank Midgley, M. O. Byrne, C. A. Shaw, H. C. Upham, Lewis Ransom, W. H. Loud, Joseph J. Levis, Wm. C. Ross, W. Gardner Very, Harry C. Thayer, Ernest L. Reid, John Kelly, Geo. P. Morrison, Ed Sullivan, E. E. Ketchum, John E. Roach, Wm. S. Smock, Russ Buhrer, J. E. A. Hussey, Irving N. Esleeck, Charles H. Esty, James R. Carter, Frank H. Winter, K. P. Osborn, Harold Hinckley, Horace S. Proctor, Charles S. Proctor, C. F. Piper, J. R. Whitney, H. C. Fowler, E. M. Pierce, C. J. Brown, Ed Bemet, J. G. Swift, J. G. Swift, Jr., Leon H. Young, H. E. Chase, E. W. Beals, H. W. Robbins, P. Weston, C. Frederic Wellington, J. L. Hilton, Paul M. Beach, Benj. H. Ballard, J. T. O'Rourke, K. H. Ways, H. A. Lindenberg, J. J. O'Brien, Lionel A. Walden, Van R. Walden and A. S. Walden.

Dayton Paper Firms Increase Wages

[FROM OUR REGULAR CORRESPONDENT]

Dayton, Ohio, November 23, 1936.—Approximately 17,000 workers in the southern part of the Miama Valley, thousands of whom are paper mill employes, have just received, or will receive wage increases, according to public statements made by the various firms involved. For instance, the Champion Paper and Fibre Company, Hamilton, has just announced through Mr. Alexander Thomson, the chairman of its Board of Directors; Mr. Logan Thomson, and its Vice-President and Production Manager, Mr. Clarke Marion, that base wages for the 4,000 employes in Hamilton and at Canton, North Carolina, will be increased 10 percent, beginning December 7, 1936.

The number of workers in the Hamilton plant affected by the increase is 2,500 and the remainder are at the Canton plant.

According to Alexander Thomson, no estimate can be made at the present time as to the exact amount of money the wage increase will mean. The increase is on the base wage, and consideration of the effect must include the company pensions, production scales, bonus arrangements and other matters.

The notice, which was posted in the Champion mills, November 19, says:

"We are glad to announce an increase in all hourly base wages, of 10 per cent, effective December 7, 1936. This is the beginning of the next period.

"Salaries of all employees in the lower brackets, except those who have for any reason been increased since January 1, 1936, also will be increased 10 per cent.

"We appreciate the splendid loyalty and cooperation continuously shown by all Champion employes."

On the basis of $1,250, the average wage paid for workmen, the 10 per cent increase would mean slightly less than $500,000 a year for the 4,000 employees.

Substantial increases have been allowed by the Gardner-Richardson Paper Company in its mills in Middletown and Lockland. This firm was one of the first in the Miami Valley to announce a pay increase, the same aggregating at least $150,000, it was stated this week. The amount has been distributed equally between both mill and office workers at the two Miami Valley plants, Mr. Gardner announced.

It was stated last week that the United Box Board Company, Urbana, had granted an increase in the Ohio plant and that the pay rise would extend to plants located in other states; also that the Seybold Machine Company, Dayton, had issued a pay increase notice, affecting hundreds in the Dayton plant, which manufactures paper cutters and printing plant equipment.

Middletown concerns have just informed their employees of a 10 per cent wage increase, the notices having been posted November 20.

J. A. Aull, president of the Sorg Paper Company, notified the 375 workers of a pay increase of 10 per cent, to be granted to all employees, effective November 30.

The Interstate Folding Box Company also announced an increase of five cents an hour for its 100 male employees and three cents an hour for its 35 women workers, effective November 19.

Officials of these companies would not estimate the amount of the payroll increase although the folding box company said the hourly rate increase approximated 10 per cent.

Milton Paper Co. Twenty Years Old

The Milton Paper Company, 119-125 West 24th street, New York is celebrating its twentieth anniversary. Founded in 1916 by Michael Milton the firm has been uniformly successful from the first year of its organization. The Milton Paper Company is supplied by the following well known paper concerns: American Writing Paper, Beveridge-Marvellum, Martin Cantine, Carew, Chemical Paper, Crocker-McElwain, Eastern Manufacturing U. S. Envelope, Falulah, W. C. Hamilton & Sons, Holyoke Card and Paper, International Paper, Lee, Linton Brothers, Parsons, Riegel, Rising, Valley, and Waterfalls Paper.

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

New London, Conn.—Braunstein-Freres, Inc., affiliated with the Standard Products Corporation, 19 West Eighteenth street, New York, manufacturer of paper products, has concluded negotiations for purchase of former Corticelli Silk Mills of Belding-Hemingway Company at New London, and will take over property at once. Structures will be remodeled and improved by new owner, with installation of equipment for a new paper mill. Facilities will be provided for employment of about 125 persons. Work is scheduled to begin at once. No estimate of cost has been announced.

New Haven, Conn.—The National Folding Box Company, Alton and James streets, manufacturer of folding paper boxes and containers, is awarding miscellaneous contracts for new addition to plant, recently referred to in these columns, comprising a one-story top addition to existing building, 30 x 100 feet, to be used for expansion in beater division. Award for structural steel has been made to the New England Iron Works, Inc., 1351 Dixwell avenue, Hamden, Conn. Work has begun on project by E. & F. Construction Company, 94 Wells street, Bridgeport, Conn., general contractor. Cost is reported over $30,000, with equipment. Fletcher-Thompson, Inc., 1336 Fairfield avenue, Bridgeport, is architect and engineer.

Holyoke, Mass.—The Miller Paper Box Company, Inc., recently organized with capital of 1000 shares of stock, no par value, plans operation of local plant for manufacture of paper boxes and containers. Henry S. Miller, 51 Holland avenue, is president and treasurer.

Shelton, Wash.—The Rainier Pulp and Paper Company, Shelton, is awarding miscellaneous contracts for work in connection with two new additions to mill, for which foundations are under way, consisting of one-story units, 60 x 150 feet and 50 x 120 feet, respectively, the first noted to be used for expansion in production division, and the latter building for storage and distribution. General contract has been let to the Austin Company, Dexter Horton Building, Seattle, Wash.; award for reinforcing steel has been made to the Pacific Coast Steel Corporation, Seattle, and for lumber, to the Reed Mill Company, Shelton. Entire project is reported to cost over $75,000, including equipment.

Chicago, Ill.—The Imperial Box Company, 1566 West Carroll street, manufacturer of folding paper boxes and containers, has awarded general contract to Smedberg & Nordell Company, 7937 Indiana Avenue, for new one-story addition to plant on Carroll street, 73 x 118 feet, estimated to cost close to $50,000, with equipment. A building permit has been issued and work will be placed under way at once. Ronald F. Perry, 32 West Randolph street, Chicago, is architect.

Fall River, Mass.—The Celanese Corporation of America, Inc., 180 Madison avenue, New York, plans construction of a large chemical plant for rayon-pulp production in connection with new mill at Fall River, where company has arranged for purchase of former textile mills of American Linen Company and American Printing Company. The former mill will be razed to provide site for the new chemical pulp unit noted. Five existing large buildings, as well as several smaller structures, will be remodeled and improved for other mill departments. Plant will be equipped to give employment to more than 4,000 persons and will represent an investment over $800,000, including machinery.

Cincinnati, Ohio—The Clopay Corporation, York street, manufacturer of paper products, is awarding miscellaneous completion contracts for new addition to paper-converting plant, now in course of erection, recently referred to in these columns. It will be two-story, 100 x 220 feet. Award for plumbing installation has been made to the William Hillenbrand Company, and electrical work to the Baur Electric Company, both Cincinnati. General contract is being carried out by the Parkway Construction Company, Keith Building, Cincinnati. New unit will cost close to $100,000, including equipment. Carl J. Kiefer, Inc., Schmidt Building, city, is consulting engineer.

Chicago, Ill.—The Arcus Ticket Company, 348 North Ashland avenue, manufacturer of tags, tickets and kindred paper specialties, has taken out a permit for new addition to paper-converting plant at 1614-16 Carroll Avenue, to be one-story, 34 x 56 feet. Award for superstructure has been made to Ragnar Benson, 807 North Cicero avenue, Chicago, and work will begin at once. No estimate of cost has been announced. Jacob Lewis, last noted address, is architect.

Toronto, Ont.—The National Cellulose of Canada, Ltd., 579 Richmond street West, and its affiliated organization, Dominion Cellulose, Ltd., same address, manufacturer of cellulose products, have acquired one-story plant at Weston road and Clouston avenue, Mount Dennis district, totaling about 25,000 square feet of floor space, formerly held by the Arco Company, Ltd., and will remodel and improve for new plant. Present works will be removed to new location in December and additional equipment installed for increased output.

Green Bay, Wis.—The Paper Converting Machinery Company, 601 Harvey street, manufacturer of paper-converting machinery and parts, has plans nearing completion for new one-story addition to plant. The Wisconsin Bridge and Iron Works Company, 5023 North Thirty-fifth street, Milwaukee, Wis., is engineer.

Appleton, Wis.—J. J. Plank & Co., manufacturers of paper mill machinery and parts, have begun construction of new one-story addition, to be used primarily for production of a new type of paper roll. No estimate of cost has been announced. J. J. Plank is president.

New Companies, Etc.

Hartford, Conn.—The Connecticut Envelope and Paper Company has been incorporated with nominal capital of $2,000, to deal in commercial paper products of various kinds. The incorporators are Edmund W. Hayes, Arlington, Mass., and Robert E. Honeyman, 115 North Main street, West Hartford.

New York, N. Y.—The Kovner Paper Box Company, Inc., has been incorporated with capital of 120 shares of stock, no par value, to manufacture and deal in paper boxes and containers. Bernard Kovner, 41 Park Row, is principal incorporator and representative.

New York, N. Y.—The Modern Millinery Box Corporation has been chartered with capital of 100 shares of stock, no par value, to manufacture and deal in paper boxes and cartons. New company is represented by Leon Kauffman, 551 Fifth avenue, New York, attorney.

New York, N. Y.—The Brightwater Paper Company, 21 East Fortieth street, a Delaware corporation, has filed notice of increase in capital stock from 12,200 to 12,300 shares, no par value.

Wilmington, Del.—The Dreka Company has been chartered in Delaware, under direction of the Corporation Service Company, Delaware Trust Building, Wilmington, with capital of $150,000, to manufacture and deal in paper and paper products. The incorporators include J. Skrivan and C. O. Layman.

Boston, Mass.—The H. D. Catty-Franz-Euler Corporation of New England, Inc., has been incorporated with capital of $30,000, to deal in wrapping papers and kindred commercial paper goods. Hugh D. Catty is president; and Franz Euler, 56 Duffield Drive, South Orange, N. J., treasurer.

To Consider Malone Reorganization Plan

[FROM OUR REGULAR CORRESPONDENT]

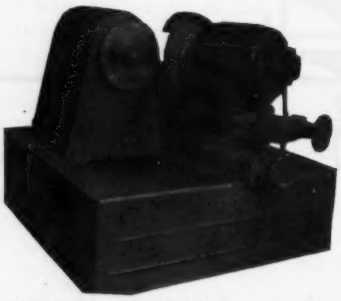
Maline, N. Y., November 21, 1936.—A meeting is scheduled late this week before Federal Judge Bryant to consider approval of the reorganization plan of the Malone Paper Company. An order filed in federal court at Utica allows creditors until November 27 to file proofs of claims but those who filed claims in the equity action begun late in June are not compelled to do so again. Operations were suspended by the company in March, 1933 and the reorganization proceedings under the new bankruptcy action was filed early last month. Under the reorganization plan the stockholders will receive nothing as they have no equity while taxes amounting to $11,500 are to be paid in full. The new concern will be known as Malone Special Papers Inc. and will have 1,500 shares of no par stock and $250,000 in four per cent bonds. A syndicate has already subscribed for 750 shares at $100 each and $125,000 of the bonds are to be issued to pay the taxes, reorganization expenses of $12,500 and allowance and disbursements of trustees amounting to $5,000. Bonds will be offered creditors at 50 per cent of face value and the right to subscribe at the ratio of $30 in bonds for each $100 of indebtedness they hold. Bonds that they do not take will be sold to other bidders at a portion of the face value. Debts of the company amount to about $212,000.

Dennison Reduces Dividend Arrears

Dennison Manufacturing Company has declared a dividend of $2 a share on the debenture stock payable November 16 to stock of record November 10. This payment will reduce the dividends in arrears on the stock from $6 a share to $4.

New Rogers Knife Grinder

A new rugged circular knife grinder for single or double bevel knives or discs, bench type (also floor type), providing accuracy and uniformity of grinding service, of sturdy construction for continuous operation with capacity for quantity production, has recently been developed by Samuel C. Rogers & Co., manufacturers of automatic saw and knife grinders, 191 Dutton avenue, Buffalo, N. Y.



This grinder is in two models No. CC1 with knives to 14 inches in diameter and No. CC2 with knives to 20 inches in diameter. It is of cabinet base construction, furnished for motor drive only. The knives are revolved by separate motor drive through V belt connection, giving smooth, positive knife revolution during the grinding process. Knife is mounted on an adjustable arbor with provision for solid circular knives or knives made in two sections. For thin knives of small diameter suitable flanges are provided for supporting the knife.

The grinding wheel, 6 x ½ inch, with suitable guard (8-inch wheel on special order) is mounted directly on the arbor of a ball bearing ¼ h. p. (larger on special order) motor with provision for eliminating and thrust, insuring smooth, precision grinding accuracy.

The entire grinding wheel and motor assembly has a double adjustable slide mounting to afford any style of grinding desired, single bevel or double bevel, with Positive graduated index for setting for any degree. A swivel adjustment permits grinding bevels either way on the work. The grinding head operates in and out by hand, through a screw and hand wheel. Adjustable steel gibs take up wear.

The machine is entirely self-contained with control switches conveniently mounted on the base. A wet grinding attachment is available on special order. It is equipped with two ¼ h. p. motors, grinding wheels, flanges, wrenches, emery dresser, ready to run.

Principles of Electrical Engineering

The most recently published book on electrical engineering is Grover C. Blaylock's book on "The Principles of Electrical Engineering in Theory and Practice (Second Edition). Mr. Blaylock is associate professor of Electrical Engineering at Purdue University. The book has 580 pages and is published by the McGraw Hill Publishing Company.

It attempts to present fundamental principles in concise form, with frequent reference to practical application. Because of the increasing use of thermionic tubes in industry, a brief chapter under the heading of Electronics has been added in which are discussed the various types and applications of vacuum tubes, gaseous-discharge tubes and photoelectric cells.

In general, the book is an excellent presentation of electrical engineering as prepared principally for college students in mechanical, civil and chemical engineering.

Copies may be obtained from the Book Department of the Technical Association of the Pulp and Paper Industry at $4 per copy.

IMPORTS OF PAPER AND PAPER STOCK

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING NOVEMBER 21, 1936

CIGARETTE PAPER

Champagne Paper Corp., *Pipestone County,* St. Nazaire, 84 cs.; H. H. Strauss, *Pipestone County,* Bordeaux, 140 cs.; Champagne Paper Corp., *Lafayette,* Havre, 413 cs.; H. White, *Lafayette,* Havre, 2 cs.; Standard Products Corp., *Lafayette,* Havre, 50 cs.

WALL PAPER

———, *Washington,* Havre, 6 cs.; ———, *Hamburg,* Bremen, 2 cs.; F. J. Emmerich, *Laconia,* Liverpool, 2 bls.; ———, *Bremen,* Bremen, 9 cs.; ———, *American Banker,* London, 4 bls., 11 cs.; S. K. Lonegren, *Gripsholm,* Gothenburg, 9 bxs.

PAPER HANGINGS

W. H. S. Lloyd & Co., *American Banker,* London, 20 bls.

NEWSPRINT

N. Y. Evening Journal, *Utsire,* Chicoutimi, 4,267 rolls; N. Y. Times Co., *Markland,* Liverpool, N. S., 836 rolls; N. Y. Tribune, Inc., *Markland,* Liverpool, N. S., 2,106 rolls; World Telegram, *Markland,* Liverpool, N. S., 601 rolls; Brooklyn Daily Eagle, *Markland,* Liverpool, N. S., 629 rolls; Westchester Newspapers, Inc., *Markland,* Liverpool, N. S., 44 rolls; Parsons & Whittemore, Inc., *Markland,* Liverpool, N. S., 543 rolls; Jay Madden Corp., *Scanmail,* Wiborg, 524 rolls! Perkins Goodwin & Co., *Hamburg,* Hamburg, 167 rolls; Jay Madden Corp., *Hamburg,* Bremen, 622 rolls; International Paper Co., *Humberarm,* Dalhousie, 5,652 rolls; International Paper Sales Co., *Humberarm,* Dalhousie, 2,857 rolls; International Paper Co., *International No. 1,* Gatineau, 308 rolls; International Paper Co., *G. T. D.,* Gatineau, 308 rolls; Jay Madden Corp., *Scanyork,* Wiborg, 354 rolls.

PRINTING PAPER

Jay Madden Corp., *Scanmail,* Wiborg, 75 rolls, 50 bls.; Kennedy & Co., *Maasdam,* Rotterdam, 4 cs.; L. A. Consmiller, *Hamburg,* Bremen, 50 cs.; Steiner Paper Corp., *Hamburg,* Bremen, 4 cs.

WRAPPING PAPER

Jay Madden Corp., *Washington,* Hamburg, 187 rolls, 27 bls.; Keller Dorian Paper Co., *Washington,* Havre, 17 cs.; ———, *Hamburg,* Hamburg, 17 cs.; E. Dietzgen & Co., *Hamburg,* Hamburg, 5 cs.; ———, *Hamburg,* Bremen, 57 bls.; ———, *Gripsholm,* Gothenburg, 71 bls., 992 rolls.

PACKING PAPER

Saentis, Inc., *Hamburg,* Hamburg, 79 pkgs.

DRAWING BOARDS

H. Reeve Angel & Co. Inc., *American Banker,* London, 3 cs.

DRAWING PAPER

Devoe & Raynolds Co., *Washington,* Havre, 2 cs.; H. Reeve Angel & Co. Inc., *American Banker,* London, 2 cs.; Winsor & Newton, Inc., *American Banker,* London, 6 cs.

FILTER PAPER

———, *Hamburg,* Hamburg, 130 rolls; C. Schleicher & Schull Co. Inc., *Hamburg,* Hamburg, 1 cs.; H. Reeve Angel & Co. Inc., *American Banker,* London, 7 cs.

FILTER MASSE

C. Schleicher & Schull Co., *Hamburg,* Hamburg, 6 bls.

FILTER COMPOUND

Mager Bros., *Hamburg,* Hamburg, 75 bls.

SURFACE COATED PAPER

C. Happel, *Washington,* Hamburg, 17 cs.; ———, *Hamburg,* Hamburg, 20 cs.; Globe Shipping Co., *Hamburg,* Bremen, 114 crates.

METAL COATED PAPER

K. Pauli Co., *Hamburg,* Hamburg, 2 cs.; K. Pauli Co., *Hamburg,* Bremen, 26 cs.

BASIC PAPER

Dingelstedt & Co., *Hamburg,* Bremen, 12 cs.; Dingelstedt & Co., *Bremen,* Bremen, 14 rolls; Globe Shipping Co., *Bremen,* Bremen, 9 crates.

TRACING PAPER

Dingelstedt & Co., *Hamburg,* Hamburg, 22 cs.

DECALCOMANIAS

Sellers Transportation Co., *Hamburg,* Hamburg, 29 cs.; Sellers Transportation Co., *Bremen,* Bremen, 25 cs.; ———, *Bremen,* Bremen, 4 cs.

DECALCOMANIA PAPER

B. F. Drakenfeld & Co., *American Importer,* Liverpool, 56 cs. (duplex).

TRANSFER PICTURES

Rohner Gehrig & Co., *Bremen,* Bremen, 9 cs.

TISSUE PAPER

B. F. Drakenfeld & Co., *American Importer,* Liverpool, 7 cs.

COLORED PAPER

International F'd'g. Co., *Hamburg,* Hamburg, 2 cs.; D. C. Andrews & Co., *Bremen,* Bremen, 5 cs.

GUMMED PAPER

G. Gennert, Inc., *Hamburg,* Hamburg, 2 cs.

PAPER TUBES

———, *Hamburg,* Hamburg, 117 pkgs.

STRAW BOARD

Balfour Guthrie & Co., *Black Eagle,* Rotterdam, 948 rolls.

MISCELLANEOUS PAPER

Japan Paper Co., *Washington,* Havre, 2 cs.; Japan Paper Co., *Niel Maersk,* Kobe, 90 cs.; ———, *Maasdam,* Rotterdam, 75 rolls; American Express Co., *Hamburg,* Hamburg, 11 cs.; Keuffel & Esser Co., *Hamburg,* Hamburg, 26 cs., 22 rolls; Jay Madden Corp., *Hamburg,* Bremen, 7 bbls., 1 cs.; Keller Dorian Paper Co., *Lafayette,* Havre, 21 cs.; Globe Shipping Co., *Lafayette,* Havre, 15 cs.; The Borregaard Co. Inc., *Gripsholm,* Gothenburg, 143 rolls, 31 bls.;

F. L. Kramer & Co., *Gripsholm,* Gothenburg, 115 bls.; C. Bruning & Co., *Black Eagle,* Rotterdam, 1 cs.

RAGS, BAGGINGS, ETC.

J. T. Flannery Co., *Pipestone County,* Havre, 102 bls. rags; R. J. Ross & Co. Inc., *Pipestone County,* Havre, 252 bls. rags; Banco Coml. Italiane Trust Co., *Pipestone County,* Havre, 181 bls. rags; W. Steck & Co., *Pipestone County,* Havre, 33 bls. rags; J. Cohen & Sons Co., *Pipestone County,* Havre, 30 bls. rags; Castle & Overton, Inc., *Pipestone County,* Havre, 152 bls. rags, 73 bls. new cuttings; ———, *Pipestone County,* Havre, 162 bls. cotton waste; D. Benedetto, Inc., *Pipestone County,* St. Nazaire, 144 bls. rags; Banco Coml. Italiane Trust Co., *Pipestone County,* St. Nazaire, 44 bls. garments, 69 bls. bagging; R. Blank, *Pipestone County,* St. Nazaire, 75 bls. rags; A. W. Fenton, Inc., *Pipestone County,* Bordeaux, 273 bls. rags; R. Blank, *Pipestone County,* Bordeaux, 114 bls. rags; J. Cohen & Sons Co., *Pipestone County,* Bordeaux, 21 bls. rags; D. Benedetto, Inc., *Pipestone County,* Bordeaux, 33 bls. rags; Katzenstein & Keene, Inc., *Pipestone County,* Bordeaux, 35 bls. rags; ——, *Niel Maersk,* Kobe, 282 bls. rags; J. J. Ryan Son, Co., *Niel Maersk,* Kobe, 200 bls. cotton waste; W. Steck & Co., *Niel Maersk,* Kobe, 80 bls. rags; R. Blank, *Maasdam,* Rotterdam, 36 bls. rags; ———, *Laconia,* Liverpool, 53 bls. rags; J. Cohen & Son Co. Inc., *Laconia,* Liverpool, 19 bls. paper stock; ——, *Hokkai Maru,* Osaka, 100 bls. picker waste, 28 bls. rags; Chase National Bank, *Hokkai Maru,* Osaka, 400 lbs. bagging; ——, *Hokkai Maru,* 500 bls. rags; R. & V. Miller, *Gripsholm,* Gothenburg, 4 bls. rags; Darmstadt Scott & Courtney, *Black Eagle,* Rotterdam, 168 bls. bagging; F. Stern, *Black Eagle,* Rotterdam, 75 bls. rags; D. Benedetto, Inc., *Black Eagle,* Rotterdam, 200 bls. rags; E. J. Keller Co. Inc., *Black Eagle,* ——, 359 bls. rags; ——, *Black Eagle,* ——, 14 bls. rags; Royal Manfg. Co., *American Importer,* Manchester, 63 bls. cotton waste; Leigh Textile Co., *American Importer,* Manchester, 21 bls. cotton waste; ——, *American Importer,* Manchester, 43 bls. paper stock, 124 bls. bagging, 355 bls. rags, 250 bls. waste; Boger Cotton Products Co., *American Importer,* Manchester, 71 bls. cotton flocks; Chase National Bank, *American Importer,* Manchester, 73 bls. bagging; J. Cohen & Sons Co., *American Importer,* Manchester, 19 bls. rags; Bank of N. Y. Trust Co., *American Importer,* Manchester, 36 bls. rags; M. Snedeker Corp., *American Importer,* Belfast, 172 bls. paper stock; E. J. Keller Co. Inc., *Examelia,* ———, 70 bls. paper stock; E. J. Keller Co. Inc., *Hamburg,* Hamburg, 45 bls. paper stock.

HIDE GLUE

———, *Saturnia,* Trieste, 536 bags.

OLD ROPE

W. Steck & Co., *Pipestone County,* Havre, 262 coils; F. Stern, *Maasdam,* Rotterdam, 34 coils; E. J. Keller Co. Inc., *American Banker,* 79 coils.

CASEIN

———, *Pipestone County,* Bordeaux, 433 bags.

WOOD PULP

Perkins Goodwin & Co., *Scanmail,* Gdynia, 1,700 bls. wood pulp, 262 tons; Lagerloef Trading Co., *Scanmail,* Wiborg, 500 bls. sulphate, 100 tons; Lagerloef Trading Co., *Scanmail,* Wiborg, 1,521 bls. sulphite, 284 tons; Lagerloef Trading Co., *Scanmail,* Helsingfors, 722 bls. sulphite, 133 tons; Lagerloef Trading Co., *Scanyork,* Wiborg, 156 bls. sulphate, 26 tons, Lagerloef Trading Co., *Scanyork,* Wiborg, 300 bls. sulphite, 60 tons; Castle & Overton, Inc., *Scanyork,* Wiborg, 695 bls. wood pulp, 136 tons; ———, *Scanyork,* Gdynia, 274 bls. wood pulp, 41 tons; Perkins Goodwin & Co., *Scanyork,* Gdynia, 518 bls. wood pulp, 80 tons; Bulkley Dunton & Co., *Black Condor,* ———, 815 bls. wood pulp; Gottesman & Co. Inc., *Kentucky,* Latvia, 4,963 bls. wood pulp; Gottesman & Co. Inc., *Kentucky,* Sweden, 7,290 bls. wood pulp.

WOOD PULP BOARDS

Jay Madden Corp., *Scanmail,* Wiborg, 263 bls., 39 tons; Jay Madden Corp., *Washington,* Hamburg, 32 bls.; Jay Madden Corp., *Scanyork,* Wiborg, 89 rolls, 24 tons; H. Fuchs & Son, *Gripsholm,* Gothenburg, 7 pkgs.; Fibre Case & Novelty Co., *Gripsholm,* Gothenburg, 23 bls.

NEWARK IMPORTS

WEEK ENDING NOVEMBER 21, 1936

H. G. Craig Co., *Newscarrier,* Donnacona, 317 rolls newsprint.

BOSTON IMPORTS

WEEK ENDING NOVEMBER 21, 1936

International Purchasing Co., *Black Eagle,* Rotterdam, 59 coils old rope; C. H. Powell Co., *Black Eagle,* Rotterdam, 296 rolls straw board; E. J. Keller Co. Inc., *Black Eagle,* ———, 19 bls. rags; ———, *Black Eagle,* Antwerp, 53 bls. rags; Gottesman & Co. Inc., *Stureholm,* Sweden, 1,200 bls. wood pulp; Pagel Horton & Co. Inc., *Stureholm,* Sweden, 1,111 bls. wood pulp; Price & Pierce, Ltd., *Stureholm,* ———, 900 bls. unbleached sulphite.

PHILADELPHIA IMPORTS

WEEK ENDING NOVEMBER 21, 1936

———, *Executive,* Algiers, 62 bls. rags; Lagerloef Trading Co., *Scanmail,* Wiborg, 1,521 bls. sulphite, 287 tons; Lagerloef Trading Co., *Scanmail,* Wiborg, 913 rolls pulp boards, 104 tons; Jay Madden Corp., *Scanmail,* Wiborg, 43 bls. pulp boards, 6 tons; J. W. Hampton Jr. Co., *Scanmail,* Wiborg, 396 rolls newsprint; Castle & Overton, Inc., *Pipestone County,* Havre, 539 bls. rags; National Vulcanized Fibre Co., *Pipestone County,* Havre, 29 bls. rags; E. J. Keller Co. Inc., *Pipestone County,* ———, 1,151 bls. rags; Castle & Overton, Inc., *Pipestone County,* St. Nazaire, 514 bls. rags; National Vulcanized Fibre Co., *Pipestone County,* St. Nazaire, 14 bls. rags; Castle & Overton, Inc., *Pipestone County,* Bordeaux, 280 bls. rags; Chase National Bank, Niel *Maersk Kobe,* 334 bls. rags; ———, *Niel Maersk,* Kobe, 290 bls. rags; E. J. Keller Co. Inc., *Maasdam,* ———, 225 bls. rags; Lagerloef Trading Co., *Scanyork,* Wiborg, 1,367 bls. sulphite, 263 tons; Castle & Overton, Inc., *Scanyork,* Wiborg, 615 bls. wood pulp, 122 tons; Paper Manufacturers Co. Inc., *Scanyork,* Wiborg, 122 rolls newsprint; J. W. Hampton Jr. Co., *Scanyork,* Wiborg, 393 rolls newsprint; ———, *Scanyork,* Gdynia, 166 bls. wood pulp, 25 tons; D. Benedetto, Inc., *Black Eagle,* Rotterdam, 65 bls. rags; ———, *Black Eagle,* Rotterdam, 24 bls. rags; Castle & Overton, Inc., *Black Eagle,* Antwerp, 371 bls. rags; M. Friedman, *Black Eagle,* Antwerp, 20 bls. rags; ———, *Black Eagle,* Antwerp, 556 bls. rags; Chase National Bank, *Black Eagle,* Antwerp, 105 bls. rags; E. J. Keller Co. Inc., *Black Eagle,* ———, 61 bls. rags; M. Sone, *Konigsberg,* Hamburg, 634 bls. wood pulp.

CAMDEN IMPORTS

WEEK ENDING NOVEMBER 21, 1936

Lagerloef Trading Co., Scanmail, *Wiborg,* 5,080 bls. sulphate, 1,015 tons.

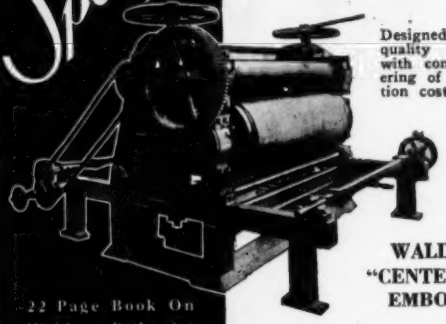
WILMINGTON IMPORTS

WEEK ENDING NOVEMBER 21, 1936

Castle & Overton, Inc., *Scanyork,* Wiborg, 5,853 bls. wood pulp, 1,173 tons; Perkins Goodwin & Co., *Scanyork,* Gdynia, 970 bls. wood pulp, 150 tons.

Specify

WALDRON EMBOSSERS



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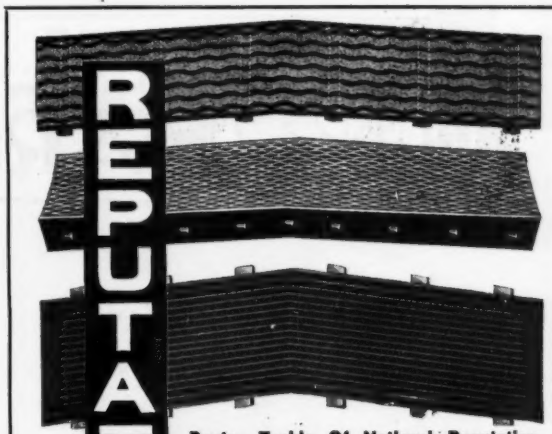

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New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, November 25, 1936.

Conditions in the local paper market continue to improve. Demand for the various standard grades of paper is brisk. Sales forces of the leading paper organizations are generally optimistic. Prices are decidedly firmer due to higher manufacturing and labor costs.

The position of the newsprint paper market is encouraging. Manufacturing operations in the United States, Canada and Newfoundland are proceeding at near capacity in order to take care of the heavy demand from the newspaper publishers. The price situation is more favorable.

Sentiment in the fine paper market is optimistic. Demand for book, cover, bond and ledger papers is well sustained. Prices on coated and uncoated book papers have advanced. Tissues are moving in good volume. The coarse paper market is quite active. Prices are one-eighth of a cent higher.

Mechanical Pulp

Offerings of ground wood pulp are limited and quotations are firmer. Production in North America and abroad is being maintained in good volume to take care of current requirements. There are a number of inquiries around for future delivery, some of which should materialize into good orders.

Chemical Pulp

The chemical pulp market continues firm. Domestic soda pulp manufacturers have advanced their prices $2 per ton effective on first quarter contracts beginning January 1, 1937, making the quotation $54 per ton, delivered. Bleached sulphite and kraft pulps are displaying strength.

Old Rope and Bagging

Some improvement transpired in the old rope market. Demand for foreign and domestic old manila rope is better. Small mixed rope is fairly active. Old rope quotations are steady to firm. The bagging market is firmer. Gunny bagging is attracting more interest, while roofing bagging is in seasonal request.

Rags

The domestic rag market is practically unchanged. Paper mill demand for old and new cotton rags is fairly insistent. No. 1 white shirt cuttings are in excellent request, both for domestic and foreign account. Roofing grades are exhibiting a strong undertone. Foreign cotton cuttings are steady.

Waste Paper

Board mill demand for the lower grades of paper stock is more active. Stocks at the mills are reported below normal, in some quarters. Quotations on strictly folded news and No. 1 mixed paper are firm. The higher grades of waste paper are steady, with prices holding to formerly quoted levels.

Twine

The twine market is stronger. Demand for the various varieties is heavy and the prevailing activity should continue until the end of the Yuletide holidays, at least. Higher quotations are announced on both polished and unpolished soft fiber twines. Prices on hard fiber twines are holding to schedule.

IMPORTS OF PAPER AND PAPER STOCK

(Continued from page 58)

bls. rags; Congoleum Nairn Co., *Pipestone County,* Havre, 1,187 bls. paper stock; S. Shapiro & Sons, *Pipestone County,* Havre, 35 bls. new rags; Congoleum Nairn Co., *Pipestone County,* St. Nazaire, 840 bls. rags; Congoleum Nairn Co., *Pipestone County,* Bordeaux,, 530 bls. rags; Scherman Bros., *Niel Maersk,* Kobe, 130 bls. rags; ———, *Maasdam,* Rotterdam, 344 bls. wood pulp; M. Sone, *Tortugas,* Stockholm, 420 bls. wood pulp; Price & Pierce, Ltd., *Tortugas,* ———, 600 bls. bleached sulphite; Price & Pierce, Ltd., *Tortugas,* 3,900 bls. unbleached sulphate, 4,500 bls. unbleached sulphite; Pagel Horton & Co. Inc., *Tortugas,* Sweden, 1,750 bls. wood pulp; Gottesman & Co. Inc., *Malaren,* Sweden, 3,109 bls. wood pulp; Gottesman & Co. Inc., *Tortugas,* Sweden, 3,850 bls. wood pulp; Bulkley Dunton & Co., *Spaarndam,* ———, 752 bls. wood pulp; Parsons & Whittemore, Inc., *City of Havre,* ———, 700 bls. wood pulp; Parsons & Whittemore, Inc., *City of Newport News,* ———, 1,005 bls. wood pulp.

NORFOLK IMPORTS

WEEK ENDING NOVEMBER 21, 1936

N. Y. Trust Co., *Pipestone County,* Havre, 90 bls. bagging.

TOLEDO IMPORTS

WEEK ENDING NOVEMBER 21, 1936

Price & Pierce, Ltd., *Margit R.,* ———, 750 bls. bleached sulphite.

J. H. Allen Elected Vice Pres. of Union Bag

Union Bag and Paper Corporation announced on Monday that James H. Allen had been elected vice-president. At the same time it was announced that Edward J. Noble had been elected a member of the board of directors to succeed Charles R. McMillen, recently resigned.

Mr. Allen joined the corporation in November, 1934, and has been closely associated with the company's activities in the South, including the location, financing, and erection of the new Savannah mill, of which he is in general charge.

Mr. Noble is president of Life Savers Corporation. He is also a director of the Commercial National Bank and Trust Company and a member of the Industrial Advisory Board of the Federal Reserve System.

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Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, November 25, 1936.

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Prices are holding to schedule. The pulp is quoted at from $42.50 to $45 per ton, in bulk; while the powder is selling at from 3½ to 3¾ cents per pound, in barrels, at works.

BLEACHING POWDER.—Conditions in the bleaching powder market are satisfactory. Shipments against contract are moving in good volume for the season. Prices remain unchanged. Bleaching powder is quoted at from $2 to $2.25 per 100 pounds, in drums, at works.

CASEIN.—The casein market is firm. Domestic standard ground is quoted at 17 and finely ground at 17½ cents; while French and Argentine standard ground are selling at 17 and finely ground at 17½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—Steadiness prevails in the caustic soda market. The contract movement is well up to average. Solid caustic soda is still quoted at from $2.55 to $2.60; while the flake and ground are selling at from $2.95 to $3 per 100 pounds, in drums, at works.

CHINA CLAY.—The china clay market is exhibiting a strong undertone. Prices are holding to schedule. Imported china clay is quoted at from $13 to $21 per ton, ship side; while domestic paper making clay is selling at from $6.50 to $12 per ton, at works.

SULPHATE OF ALUMINA—The sulphate of alumina market is displaying strength. Contract shipments are regular. Commercial grades are still quoted at from $1.35 to $1.60; while iron free is selling at from $2 to $2.25 per 100 pounds, in barrels, at works.

SULPHUR.—The sulphur market is steady. Yearly contracts are quoted at $18 per long ton, on orders of 1,000 tons, or over, and $20 on smaller quantities. On spot and near by car loads, the quotation is $21 per ton. All quotations are in car lots, at works.

TALC.—Most of the business transacted in the talc market during the past week was routine. Prices remain unchanged. Domestic talc is quoted at from $16 to $18 per ton, at eastern mines; while imported talc is selling at from $23 to $30 per ton, on dock.

CHLORINE.—Paper mill demand for chlorine is well sustained. Shipments against contract are going forward at a brisk pace. Prices continue steady to firm. Chlorine is quoted at from $2.15 to $2.25 per 100 pounds, in car lots, at works.

ROSIN.—The rosin market is strong. Paper making gum rosin is now quoted at $7.40 and wood rosin at $7.25 per 280 pounds, gross weight, in barrels, at Savannah. Seventy per cent rosin size is selling at $3.47 per 100 pounds, in tank cars, at works.

SALT CAKE.—Demand for salt cake is fairly active. Prices remain steady and unchanged. Salt cake is quoted at from $12 to $13; chrome salt cake at from $11 to $12 per ton, at works; while imported salt cake is selling at from $12 to $13 per ton, ship side.

SODA ASH.—The soda ash market is holding up well. Contract shipments are moving freely. Prices are holding to schedule. Quotations on soda ash, in car lots, at works, per 1000 pounds, are as follows; in bulk, $1.05; in bags, $1.20; and in barrels, $1.50.

STARCH.—Business in the starch market is moderately active. The contract movement is normal for the time of year. Prices are steady. Special paper making starch is quoted at $4 per 100 pounds, in bags; and at $4.27 per 100 pounds, in barrels, at works.

Market Quotations

Paper

Rag Content Bond & Ledgers—Delivered Zone 1

	Bonds		Ledgers
100% Rag Ext. No. 1	nom		nom
100% Rag	.29	@	.30
75% Rag	.22	@	.23
65% Rag	.19	@	.20
50% Rag	.15½	@	.16½
25% Rag	.13	@	.14

Sulphite Bond & Ledgers—Delivered Zone 1

	Bonds		Ledgers
No. 1 Sulphite	7.50	@	8.50
No. 2 Sulphite	6.50	@	7.50
No. 3 Sulphite	6.00		7.00
No. 4 Sulphite	5.50		6.50

Book, B Grade, Cased

S. & S. C.	6.10	@	6.85
S. & S. C. Litho.	6.35	@	7.10
M. F.	5.95	@	6.60
Coated and Enamel	7.15	@	8.00
Coated Litho	7.15	@	8.00

Tissues—Per Ream—

White No. 1	.82½	@	—
White No. 1 M. G.	.77½	@	—
White No. 1½	.62½	@	—
White No. 2	.60	@	—
Anti-Tarnish M. G.	.67½	@	—
Colored	.80	@	—
Kraft	.67½	@	—
Manila	.60	@	—
Unbleached Toilet	2.60	@	3.30
Bleached Toilet	3.94	@	5.26

Paper Towels—

Unbleached	2.10	@	3.35
Bleached	3.30	@	3.70

Manila—

No. 1 Jute	9.00	@	9.25
No. 2 Jute	7.75	@	8.50
No. 1 Wood	4.00	@	5.25
No. 2 Wood	3.50	@	4.00

Fibre Papers—

No. 1 Fibre	4.25	@	5.50
No. 2 Fibre	4.00	@	4.75

(Delivered New York)

News, per ton—

Roll, contract	41.00	@	—
Sheets	46.00	@	—

Kraft—

No. 1 Northern	4.25	@	4.75
Standard	4.12½	@	4.25
Southern	4.00	@	—
Glazed	4.50	@	—
Striped	4.75	@	—

Boards, per ton—

News	37.50	@	40.00
Chip	35.00	@	37.50
Sgl. Mla. Lt. Chip	50.00	@	52.50
Jute Lined Chip	50.00	@	52.50
Kraft Liners	65.00	@	67.50
White Pat. Coated	60.00	@	62.50
Binders Boards	67.00	@	75.00

Mechanical Pulp

(On Dock, Atlantic Ports)

No. 1 Imported—Moist	25.00	@	26.00
Dry	25.00	@	26.00

(Delivered)

No. 1 Domestic and Canadian	28.00	@	29.00

Chemical Pulp

(On Dock, Atlantic, Gulf and West Coast Ports)

Bleached Sulphite (Domestic and Foreign)—			
Prime Bleached Sulphite	2.70	@	3.30
Prime Qualities—			
Class 1. All Prime Easy Bleaching	2.30	@	2.40
Other Than Easy Bleaching—			
Class 2. Higher than Standard	2.25	@	2.30
Class 3 Standard	2.10	@	2.25
Class 4. Lower than Standard	2.10	@	2.20

(On Dock, Atlantic Ports)

Kraft Bleached	3.00	@	3.25
Kraft Light & Strong	2.20	@	240
Kraft No. 1	2.20	@	2.40
Kraft No. 2	2.10	@	2.15

(F. o. b. Pulp Mill)

Kraft Domestic	1.95	@	2.20

(Delivered)

Soda Bleached	2.60	@	—

* Add 60 Cents per short ton, dock charges, for Albany; $2.00 for Lake Ports East and $3.00 for Lake Ports West of Mackinac Straits.

Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

Shirt Cuttings—			
New White, No. 1	7.75	@	8.00
Silesias No. 1	6.25	@	6.50
New Unbleached	8.25	@	8.50
New Soft Blacks	3.75	@	4.00
Blue Overall	6.75	@	7.00
Fancy	3.00	@	3.25
Washables	2.25	@	2.50
Mixed Khaki Cuttings	3.50	@	3.75
O. D. Khaki Cuttings	4.25	@	4.50

Old Rags

White, No. 1—			
Repacked	3.25	@	3.50
Miscellaneous	2.75	@	3.00
White, No. 2—			
Repacked	2.25	@	2.50
Miscellaneous	1.75	@	2.00
Thirds and Blues—			
Repacked	2.00	@	2.25
Miscellaneous	1.90	@	2.00
Roofing Rags—			
No. 1	Nominal		
No. 2	1.60	@	1.65
No. 3 (bagging)	1.50	@	1.55
No. 4	1.50	@	1.60
No. 5A	1.40	@	1.50

Foreign Rags

New Rags

New Dark Cuttings	2.25	@	2.50
New Mixed Cuttings	2.00	@	2.25
New Light Silesias	5.50	@	5.75
Light Flannelettes	5.50	@	5.75
New White Cuttings	7.00	@	7.50
New Light Oxfords	4.00	@	4.50
New Light Prints	3.00	@	3.25

Old Rags

No. 1 White Linens	7.50	@	8.00
No. 2 White Linens	6.50	@	7.00
No. 3 White Linens	4.50	@	5.00
No. 4 White Linens	2.25	@	2.50
No. 1 White Cotton	4.25	@	4.75
No. 2 White Cotton	3.25	@	3.75
No. 3 White Cotton	2.50	@	2.75
No. 4 White Cotton	1.90	@	2.15
Extra Light Prints	2.00	@	2.25
Ord. Light Prints	1.75	@	1.85
Med. Light Prints	1.55	@	1.65
Dutch Blue Cottons	2.25	@	2.50
French Blue Linens	3.50	@	4.00
German Blue Linens	2.50	@	2.75
German Blue Cottons	2.00	@	2.25
Checks and Blues	2.00	@	2.25
Linsey Garments	2.15	@	2.25
Dark Cottons	1.90	@	2.10
Old Shopperies	1.75	@	2.00
New Shopperies	1.75	@	2.00
French Blues	2.25	@	2.50

Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

Gunny No. 1—			
Foreign	2.10	@	2.15
Domestic	1.90	@	2.00
Wool Tares, light	1.50	@	1.75
Wool Tares, heavy	1.85	@	2.05
Bright Bagging	1.70	@	1.75
Manila Rope—			
Foreign	2.75	@	3.00
Domestic	2.75	@	3.00
Jute Strings	2.00	@	2.25
Sisal Strings	2.00	@	2.10
Mixed Strings	.80	@	1.00

Old Waste Papers

(F. o. b. New York)

Shavings—			
White Envelope Cuttings	2.60	@	2.70
Ordinary Hard White No. 1	2.25	@	2.35
Hard White No. 2	2.10	@	2.20
Soft White No. 1	2.00	@	2.10
Flat Stock—			
Stitchless	.80	@	.90
Over issue Mag	.80	@	.90
Solid Flat Book	.75	@	.80
Crumpled No. 1	.50	@	.55
Ledger Stock	.95	@	1.00
New B. B. Chips	.30	@	.35
Manilas—			
New Env. Cut	1.75	@	1.85
New Cuttings	1.35	@	1.45
Old Kraft Machine—			
Compressed bales	1.15	@	1.30
News—			
No. 1 White News	1.25	@	1.35
Strictly Overissue	.60	@	.70
Strictly Folded	.50	@	.55
No. 1 Mixed Paper	.42½	@	.47½

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Twines

(F. o. b. Mill)

(Soft Fibre)

Coarse Polished—			
India	.14¼	@	.16¾
Belg. White Hemp	.15¼	@	.18½
India Compress	.14¾	@	.15¼
Fine Polished—			
Fine India	.20	@	.22
Unpolished—			
Box	.10¾	@	.10¾
Paper Makers	.11½	@	.12
Tube Rope	.11	@	.13¾
Wall Paper	.12	@	.12¾
Wrapping	.15¾	@	.19¼
Soft Fiber Rope	.13¼	@	.13¾

(Hard Fibre)

Bond	.12	@	.20½
Anchor	.11½	@	.13
Manila	.21	@	.28

CHICAGO

Paper

(F. o. b. Mill)

Rag Bond	.12	@	.40
Water Marked Sulphite Bond	.06¾	@	.11
Sulphite Bond	.05½	@	.07¼
Superfine Writing	.18	@	.24
No. 1 M. F. Book	.06½	@	.07¼
No. 2 M. F. Book	.05¼	@	.06¼
No. 1 S.&S.C. Book	.06¾	@	.07¾
No. 2 S.&S.C. Book	.05¾	@	.06½
Coated Book	.07	@	.12
Coated Label	.07	@	.08½
No. 1 Manila	.04¼	@	.05¾
No. 1 Fibre	.04¾	@	.05¼
No. 2 Manila	.04¼	@	.04¾
Butcher's Manila	.03¼	@	.03¾
No. 1 Kraft	4.75	@	5.00
Southern Kraft	3.88	@	4.25
No. 2 Kraft	3.88	@	4.25
Wood Tag Boards	.04¾	@	.06¼
Sulphite Screenings	.03	@	.03¾
Manila Tissue	.05¾	@	.07
White Tissue	.07	@	.09

(Delivered Central Territory)

News, per ton—			
Rolls, contract	42.00	@	—
Sheets, open	47.00	@	—
Boards, per ton—			
Plain Chip	46.50	@	—
Solid News	50.00	@	—
Manila Lined Chip	55.00	@	—
Patent Coated	65.00	@	—
Container Lined—			
85 Test, per 1000 sq. ft.			1.70
100 Test, per 1000 sq. ft.			1.85

Old Papers

(F. o. b. Chicago)

Shavings—			
No. 1 White Envelope Cuttings	1.70	@	2.00
No. 1 Hard White	1.40	@	1.65
No. 1 Soft White	1.25	@	1.50
Ledger & Writings	.60	@	.70
Solid Books	.50	@	.60
Blanks	1.00	@	1.05
Krafts	.80	@	.90
New Kraft Cuts	1.20	@	1.30
Manila Env. Cuts	1.25	@	1.30
Ex. No. 1 Manila	.90	@	1.00
Print Manila	.40	@	.50
Overissue News	.40	@	.45
Old Newspapers—			
No. 1 Folded News	.42½	@	.45
No. 1 Mixed Paper	.25	@	.30
Roofing Stocks—			
No. 1	30.00	@	—
No. 2	28.00	@	—

PHILADELPHIA

Paper

Rag Content Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
No. 1 Sulphite	7.75	8.75
No. 2 Sulphite	6.75	7.75
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, M. F.	5.00	@	—
Book, S. S. & C.	5.25	@	—
Book, Coated	6.15	@	—
Coated Lithograph	6.15	@	—
No. 1 Jute Manila	10.50	@	—
Manila Sul., No. 1	6.75	@	—
Manila No. 2	4.25	@	—
No. 1 Kraft	6.00	@	—
Southern Kraft	5.00	@	—
News Print Rolls	40.00	@	—
Straw Board	40.00	@	45.00
News Board	40.00	@	—
Chip Board	37.50	@	—
Wood Pulp Board	70.00	@	85.00
Binder Boards—			
No. 1, per ton	75.00	@	80.00
No. 2, per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	$2.25	@	$4.25
Slaters (per roll)	.84	@	.94

Domestic Rags (New)

(Price to Mill, f. o. b. Phila.)

Shirt Cuttings—			
New White, No. 1	.08	@	.08½
New White, No. 2	.04½	@	.05
Light Silesias	.05½	@	—
Silesias, No. 1	.04½	@	.05
Black Silesias, soft	.03½	@	.04
New Unbleached	.06	@	—
Washable, No. 1	.02	@	.02½
Blue Overall	.07	@	.07½
Cottons—According to grades—			
Washable, No. 2	.02½	@	.04½
New Blue	.02	@	.02½
Fancy	.03	@	—
New Black Soft	.04	@	.04½
New Light Seconds	.03½	@	.04
New Dark Seconds	2.00	@	2.25
Khaki Cuttings—			
No. 1 O. D.	.04	@	.04½
No. 2 Mixed	.03½	@	.04
Corduroy	.02	@	.02½
New Canvas	.04	@	.04½
New Black Mixed	.02	@	.02¼

Domestic Rags (Old)

White No. 1—			
Repacked	4.00	@	4.50
Miscellaneous	3.00	@	3.50
Thirds and Blues—			
Miscellaneous	2.00	@	2.25
Repacked	2.50	@	2.75
Black Stockings (Export)	4.50	@	5.00
Roofing Stock—			
Foreign No. 1	2.20	@	2.25
Domestic No. 1	1.50	@	1.60
Domestic No. 2	1.40	@	1.50
Roofing bagging	1.10	@	1.20

Bagging

(F. o. b. Phila.)

Gunny, No. 1—			
Foreign	2.00	@	—
Domestic	2.25	@	—
Manila Rope	2.75	@	—
Sisal Rope	2.25	@	2.35
Mixed Rope	1.00	@	1.10
Scrap Burlaps—			
No. 1	2.25	@	2.50
No. 2	1.00	@	1.10
Wool Tares, heavy	3.25	@	3.50
Mixed Strings	1.00	@	1.10
No. 1 New Light Burlap	3.00	@	3.50
New Burlap Cuttings	2.50	@	2.75

Old Papers

(F. o. b. Phila.)

Shavings—			
No. 1 Hard White	2.30	@	2.40
No. 2 Hard White	2.10	@	2.20
No. 1 Soft White	1.90	@	2.00
No. 2 Soft White	1.40	@	1.45
No. 1 Mixed	—	@	.85
Solid Ledger Stock	1.50	@	1.60
Ledger Stock, white	1.15	@	1.20
Ledger Stock, colored	.85	@	.90
No. 1 Books, heavy	.70	@	.75
Manila Cuttings	1.80	@	1.90
Print Manila	.55	@	.60
Container Manila	.55	@	.60
Kraft Paper	1.10	@	1.20
No. 1 Mixed Paper	.45	@	.50
Straw Board Chip	.40	@	—
Binders Board Chip	.40	@	—
Corrugated Board	.60	@	.65
Overissue News	.70	@	.75
Old Newspapers	.50	@	.55

BOSTON

Paper

Rag Content Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
100% Rag Ext. No. 1	.36	.37
100% Rag	.28	.29
75% Rag	.21	.22
65% Rag	.18	.19
50% Rag	.15	.16
25% Rag	.12½	.13½

Sulphite Bond & Ledgers—
Delivered Zone 1

	Bonds	Ledgers
No. 1 Sulphite	7.50	8.50
No. 2 Sulphite	6.50	7.50
No. 3 Sulphite	6.00	7.00
No. 4 Sulphite	5.50	6.50

F.o.b. Mill

Book, Super	.06	@	.09
Book, M. F.	.05½	@	.08½
Book, Coated	.08¼	@	.18
Coated Litho	.09	@	.12
Jute Manila No. 1	.11	@	.13
Manila, Sul. No. 1	.04¾	@	.06¼
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.04¾	@	—
No. 2 Kraft	.04½	@	—

(Delivered New England points)

Southern Kraft	.04	@	—
News Print Rolls	39.50	@	—
Straw Board, rolls	.009	@	35.00
Filled News Board	42.50	@	45.00
Chip Board	40.00	@	42.50
Single Manila Lined Chip	50.00	@	55.00
Single White, Patent Coated News Board (Bender)	60.00	@	65.00
Wood Pulp Board	70.00	@	75.00
Binder Boards (Standard Grade)	67.00	@	75.00

Old Papers

(F. o. b. Boston)

Shavings—			
No. 1 Hard White	2.20	@	2.35
No. 1 Soft White	1.85	@	2.15
No. 2 Mixed	.75	@	.80
Solid Ledger Books	1.50	@	1.75
Overissue Ledger Stock	1.15	@	1.30
Mixed Ledgers	.85	@	.90
No. 1 Books, heavy	.70	@	.80
No. 1 Books, light	.50	@	.60
Crumpled Stitchless Book Stock	.50	@	.60
Manila Env. Cuttings	1.50	@	1.60
Manila Env. Cuttings, extra quality	1.75	@	1.85
Old Newspapers	.47½	@	.50
No. 1 Old Manila	.60	@	.65
White Blank News	1.10	@	1.15
No. 1 Kraft	1.25	@	—
Mixed Papers	.40	@	.45
Print Manila	.60	@	.70
Container Manilas	.27½	@	—
Old Newspapers	.50	@	.55
Overissue News	.50	@	.65
Box Board Chips	.40	@	.45
Corrugated Boxes	.50	@	.60
Kraft corrugated boxes	.95	@	1.00
Screening Wrappers	40	@	.45

Bagging

(F. o. b. Boston)

Manila Rope—			
Foreign	2.85	@	—
Domestic	2.87½	@	—
Transmission Rope	1.25	@	1.35
Jute Rope	2.12½	@	2.25
Jute Carpet Threads	1.65	@	1.75
Gunny No. 1—			
Foreign	2.05	@	2.15
Domestic	1.90	@	2.00
Bleachery Burlap	4.25	@	4.50
Scrap Burlap—			
Foreign	2.00	@	2.05
Domestic	1.80	@	1.90
Scrap Sisal	2.00	@	2.10
Scrap Sisal for Shredding	2.10	@	2.35
Wool Tares, heavy	1.90	@	2.00
New Burlap Cuttings	2.25	@	2.50
Australian Wool Pouches	2.75	@	2.80
Heavy Baling Bagging	2.00	@	2.50
Paper Mill Bagging	1.65	@	1.70
Bagging No. 2	1.10	@	1.25

Domestic Rags (New)

(F. o. b. Boston)

Shirt Cuttings—			
New Light Prints	.03½	@	.03¾
New White No. 1	.07½	@	.08
New White No. 2	.04½	@	.05
Silesias No. 1	.06½	@	.06¾
New Black Silesias	.03½	@	.04
Soft Unbleached	.08	@	.08¾
Blue Chevoit	.06¾	@	.07
Fancy	.03	@	.03¾
Washable	.02	@	.0250
Cottons—According to grades—			
Blue Overalls	6.25	@	6.75
New Black, soft	.04	@	.04¾
Khaki Cuttings	.03¾	@	.04
O. D. Khaki	.03½	@	.04¾
Corduroy	.02¾	@	.03
New Canvas	—	@	.05
B.V.D. Cuttings	.07¾	@	.08

Domestic Rags (Old)

(F. o. b. Boston)

Canvas	.04½	@	—
White No. 1—			
Repacked	—	@	2.75
Miscellaneous	2.50	@	2.75
White No. 2—			
Repacked	1.90	@	2.00
Miscellaneous	2.00	@	2.25
Twos and Blues	1.75	@	2.00
Thirds and Blues—			
Repacked	1.37½	@	1.75
Miscellaneous	1.25	@	1.62½
Black Stockings	3.90	@	4.00
Roofing Stock—			
No. 1	1.75	@	1.80
No. 2	1.65	@	1.70
No. 3	1.30	@	1.35

Foreign Rags

(F. o. b. Boston)

Dark Cottons	1.85	@	2.00
New White Shirt Cuttings	6.50	@	6.75
Dutch Blues	2.25	@	2.50
New Checks & Blues	2.50	@	3.00
Old Fustians	2.05	@	2.25
Old Linsey Garments	2.00	@	2.37½
New Silesias	5.75	@	6.00

TORONTO

Paper

Bond—Delivered—			
No. 5 White	.10¾	@	—
No. 6 White	.10	@	—
No. 5 Tints	.11¾	@	—
No. 6 Tints	.10½	@	—
No. 5 Golden Rod	.12¾	@	—
No. 6 Golden Rod	.12	@	—
Ledgers—			
Ledgers, No. 1	.34½	@	—
Ledgers, No. 2	.25½	@	—
Writing	.09	@	.09½
Book—			
No. 1 M. F.	6.50	@	6.75
No. 2 M. F.	6.25	@	6.50
No. 3 M. F.	5.00	@	5.35
No. 1 S. C.	7.00	@	7.50
No. 2 S. C.	6.50	@	7.00
No. 3 S. C.	5.50	@	6.00
No. 1 Coated and Litho	12.00	@	—
No. 2 Coated and Litho	10.50	@	—
No. 3 Coated and Litho	9.50	@	—
Coated tinted	13.00	@	—
Wrapping—delivered—			
Rag Brown	4.75	@	—
White Wrap	3.50	@	—
"B" Manila	4.80	@	—
No. 1 Manila	5.40	@	—
Fiber	5.40	@	—
Kraft. M. F.	5.90	@	—
Kraft. No. 2	5.40	@	—

(F. o. b. Cars Toronto)

News, per ton—			
Rolls (contract)	Nominal		
Sheets	Nominal		

Pulp

Ground wood	27.00	@	—
Unbleached Sulphite	42.00	@	—
Book (Class 1)	58.00	@	—
Writing (Class 2)	59.00	@	—
Select (Class 3)	60.00	@	—

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut	2.00	@	2.25
Soft White	1.60	@	1.90
White Blk. News	1.25	@	1.40
Book and Ledger—			
Flat Magazine and Book Stock (old)	.80	@	.90
Light and Crumpled Book Stock	.70	@	.80
Ledgers and Writings	.90	@	1.00
Manilas—			
New Manila Cut	1.25	@	1.40
Printed Manilas	.50	@	—
Kraft	1.00	@	1.60
News and Scrap—			
Strictly Overissue	.55	@	—
Strictly Folded	.50	@	—
No. 1 Mixed Paper	.40	@	—

Domestic Rags

(Price to mills, f. o. b. Toronto)

No. 1 White Shirt Cuttings	.07¼	@	.08
Fancy Shirt Cuttings	.02¾	@	.03

PAPER TRADE JOURNAL

ESTABLISHED 1872

SIXTY-FIFTH YEAR

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

Published Every Thursday by the LOCKWOOD TRADE JOURNAL CO., Inc.

GEO. S. MACDONALD, President — JOSEPH P. HORGAN, Secretary

Published at 34 No. Crystal St., East Stroudsburg, Pa.
Executive and Editorial Offices: 15 West 47th Street, New York
Chicago Office: 123 West Madison St.

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